AN HBJ PUBLICATION

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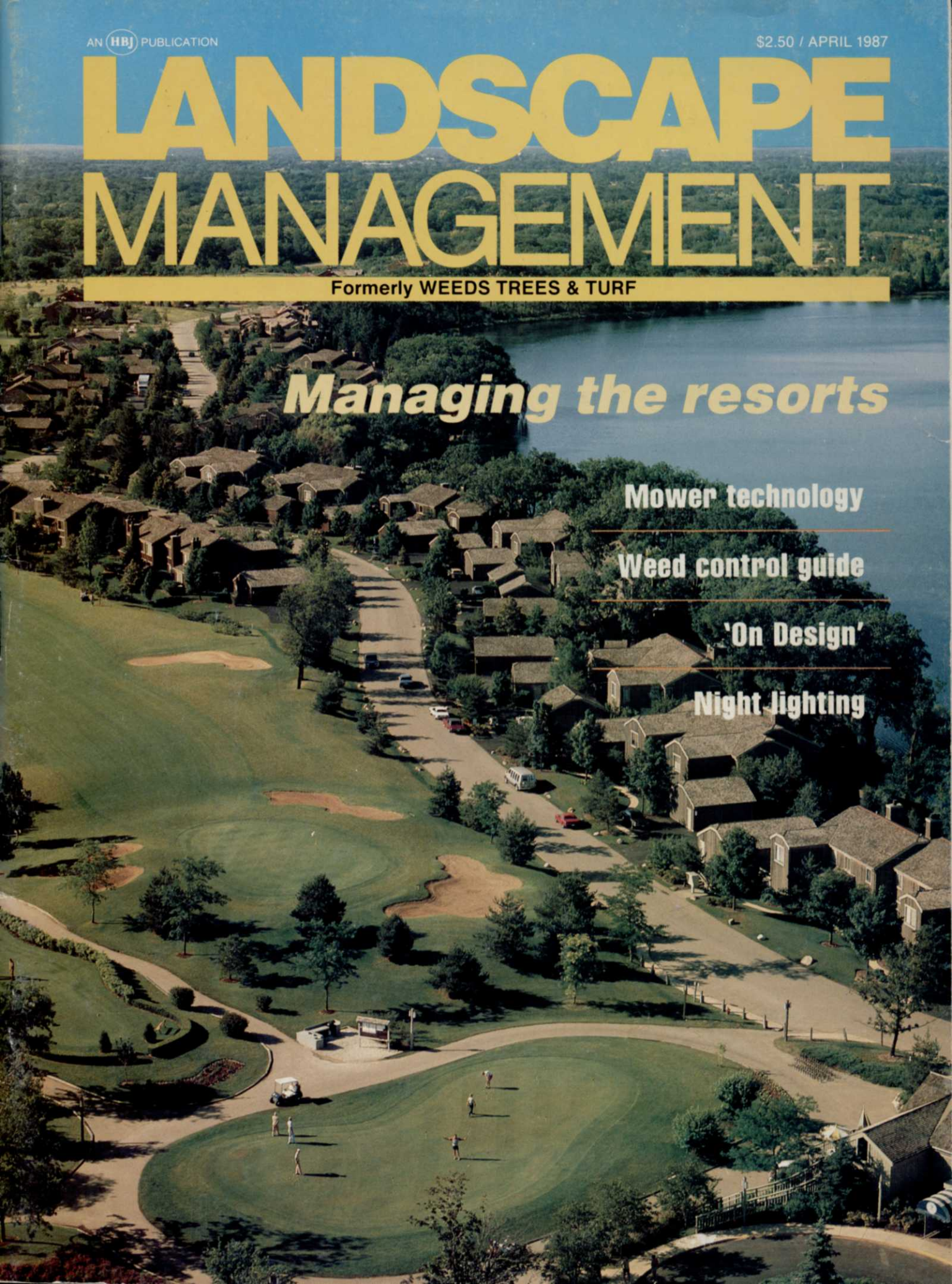
LANDSCAPE MANAGEMENT

Formerly WEEDS TREES & TURF



Managing the resorts

Mower technology

Weed control guide

'On Design'

Night lighting

David Kroll, CGCS, inspects one of 18 PennLinks greens at Wilmington CC, Delaware

PennLinks creeping bentgrass — working wonders at Wilmington

New bentgrass variety provides a truer putting surface at Wilmington CC.

When David Kroll, CGCS, was dealt the problem of bentgrass deterioration on the greens of this prestigious country club, he called in the experts to help. The greens could not be salvaged, so they were treated with methyl bromide and completely re-greened.

This Wilmington green was seeded in early '60s with poor quality seed fraudulently labeled Penncross. All the greens deteriorated to the point that they had to be entirely renovated.

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A WORD FROM THE PUBLISHER . . .

We are pleased to announce that, with this issue, Weeds Trees & Turf becomes LANDSCAPE MANAGEMENT.

The new name culminates several years of investment in editorial, circulation and market research which have resulted in numerous editorial awards and unprecedented ad growth.

Setting new publishing trends has become a routine part of our history since the magazine was introduced as the first national landscape monthly 25 years ago. A few landmarks:

**We identified lawn care as an emerging market and published the first magazine for that industry in 1977.

**We have published innovative product and market guides since 1978.

**We sponsored the first all-encompassing annual trade show in the field, Landscape Expo, in 1986.

Today, our readers spend more than $2 billion every year on chemicals, equipment and seed for their business activities. These landscape managers are better educated than ever. But they face more complex management demands.

For this reason, and others, the majority of our readers tell us that they prefer LANDSCAPE MANAGEMENT over any other possible name for their trade magazine.

The new name better aligns our magazine with the present, and opens exciting avenues of future service. LANDSCAPE MANAGEMENT hopes to continue to merit your confidence as the fastest growing magazine in the industry.

Richard A. Gore
Publisher

FOR THIS YOU NEED A MOWER WITH MORE THAN JUST YOUR AVERAGE GARDEN VARIETY ENGINE.

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Built for a hard day's work.

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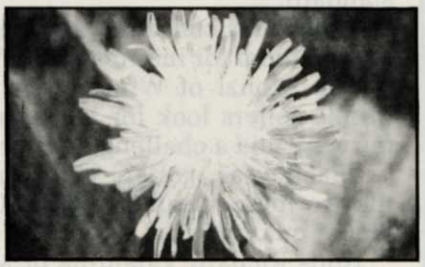

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Green industry consultants come in all shapes and sizes. Whether you're in the private or public sector, a landscape contractor or a golf course superintendent, you might need one some day.

86 'WILD' FLOWERS
Planting flowers doesn't have to be boring. Creativity and color can liven up any landscape.

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As the landscape management market grows more competitive, companies need to gather more information to stay alive. Here are some points not to be overlooked.

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The landscape manager at a Ford Motor Company office is an advocate of 'integrated' pest management, 'integrating' enough herbicides and insecticides to do the job.

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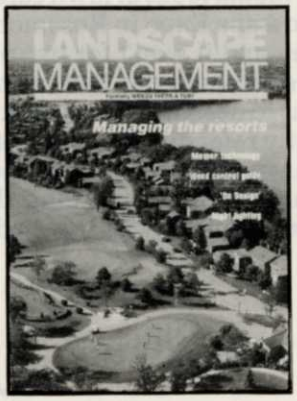

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BPA ABP HBJ A HARCOURT BRACE JOVANOVICH PUBLICATION

What the golfer looks for

■ Golf course superintendents do not agree on just what a golfer is looking for in a course. What they *do* know is how to give the golfer what they *think* he wants.

"There are no tricks," says Mike McBride of Muirfield Village Golf Course, Dublin, Ohio. "It's just important that the members of your staff understand the goals you're trying to attain, and they all take pride in the work and seeing the golf course at a high standard."

McBride is constantly changing the course's design. "There's always room for improvement," he observes.

Bob Alonzi of Winged Foot Golf Club, Mamaroneck, N.Y. thinks golfers look for three things: fast and true greens, tight fairways and a challenging course.

"Each year, golfers have increased their demand because they're improving," he says. "Great players want to play on a higher quality turf."

Adds Richard Valentine of Merion Golf Club, Ardmore, Pa.: "Challenge is the big thing. When the golfer is rewarded, it keeps his interest in the course."

Inarguably one of the most popular courses in the country is Pebble Beach (Golf Links), Pebble Beach, Calif., where Larry Norman thinks aesthetics is the key.

"A golfer is looking for the combination of the best possible course and landscape," he says. "They like for the environment to be as pleasing as possible."

In the Sun Belt, however, where so many golfers are transplanted northerners, things might be a little different. According to Bill Whitaker of Seminole Golf Coub, North Palm Beach, Calif., "golfers want conditions similar to the clubs they're accustomed to."

Another round with the media?

■ The bad publicity the lawn care industry received last year will not abate for a while yet, says Elliot Maras, editor of *Lawn Care Industry*.

"The media looks at lawn care as a new story," he told people at the Landscape Expo in Rosemont, Ill. "It's not looked upon as old news yet, and it won't for two or three more years."

Maras recommends that lawn care operators set up local organizations to designate local spokespersons for the industry, and to frequently refer questions to qualified researchers. "The industry has to have scientific people speak on its behalf," he said. "Too many lawn care people think that what the company president has to say is enough for the media—but it's not."

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The Yamaha Terrapro work be

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Or to be more specific, an ASAE standard, 1-inch, 2,000 rpm PTO which operates a variety of mowers and sprayers.

The Yamaha sprayer with boom will help eliminate insects, fungi, weeds and long days.

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For spraying fertilizers, insecticides, herbicides, fungicides* or other kinds of industrial liquids, there's the Terrapro System of sprayers made for Yamaha by Broyhill.

They come in 50 and 100 gallon sizes with a versatile hand-held sprayer that lets you get at those hard to

With the Terrapro hand-held sprayer you can spray anything from crops to cattle.

***Warning:** Use of certain chemicals may cause injury and property damage. Read sprayer owner's manual and follow chemical label directions.*

180 day limited warranty includes Terrapro and Yamaha mowers and sprayers. Warranty terms are limited. See your Yamaha dealer for details. Dress properly for your ride with a helmet, eye protection, long sleeved shirt, long trousers, gloves and boots. Designed for off-road, operator use only. This product is to be used by one person only.

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The Yamaha Terrapro PTO is an ASAE standard, 1-inch, 2,000 rpm. Translated, that means it's really versatile.

A Yamaha mower trims hours off your workday.

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Or what's below. Like the high-flotation tires that let you go out into the mud. And come back.

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CONVENTIONS

GCSAA breaks all kinds of size records

The Golf Course Superintendents Association of America Conference and Trade Show continued its growth trend with this year's show.

The 1987 show broke all existing records, attracting 12,588 attendees who viewed exhibits from 331 exhibitors, including new exhibitors. Exhibits covered 108,500 square feet of exhibit space. Among the exhibits were 81 exhibitors new to the show.

The traditional ribbon-cutting ceremony was held by the Board of Directors Saturday. Some rainy weather later that day, January 31, kept many of the conference visitors of the golf course and on the trade show floor, making for quite a few happy exhibitors.

GCSAA show sets record with 331 exhibitors, 12,588 attendees.

Attendees voiced praise for 29 educational seminars presented by 44 instructors. Almost 400 hours of education were offered, including seven new seminars.

Educational programs were also conducted by the USGA Green Section, the American Society of Golf Course Architects, the National Golf Foundation and the Sports Turf Managers Association.

Elected as GCSAA officers were Donald Hearn, president; John Segui, vice president; Stephen Cadenelli and Randy Nichols, directors. Dennis Lyon was appointed secretary/treasurer.

On hand to present programs and/or awards were pro football Hall of Famer Bart Starr, Marie Osmond and the Osmond Brothers, and NBC sports commentator Jay Randolph, who presented the "Old Tom Morris" award (see "golf notes").

CONVENTIONS

Inventor honored by Jake

The late Lawrence L. Lloyd, past GCSAA member and inventor of the Turf Groomer greens conditioner, was posthumously honored by Jacobsen at a special reception held during the GCSAA Conference and Trade Show.

A plaque picturing the Turf Groomer and commemorating its inventor was presented to his wife Barbara by Jacobsen president John R. Dwyer Jr.

"Very few people succeed in following through with all of the steps that are so crucial to the development of a new product," Dwyer observed. "We are gathered here today to honor one man who did succeed."

Barbara Lloyd (left) honored by John R. Dwyer Jr. of Jacobsen.

Mrs. Lloyd said she wasn't surprised when her late husband finally perfected a saleable product. "He didn't finish the 10th grade, but machine-wise, he was very good," she noted. "He worked during the day, and then worked on the Turf Groomer weekends and nights."

The Turf Groomer is a machine that slows thatch build-up, improves green speed and reduces grain while promoting a healthier, more consistent putting surface.

Golf notes

Several awards were presented at the GCSAA Convention and Trade Show in January:

- NBC commentator Jay Randolph presented the GCSAA's highest honor, the "Old Tom Morris" award, to Robert Trent Jones Sr. Opined Jones: "The design of courses will be hurt tremendously if they don't do something about the ball. It's too hot (long) nowadays. These guys are driving past the natural and designed obstacles that make skill part of golf."
- GCSAA president Riley Stottern presented the association's prestigious Distinguished Service Award to Dr. James Love of Wisconsin and David Gourlay Sr. of Canada.
- Stottern also presented the Leo Feser Award to David Harmon, superintendent at the Golden Horseshoe Golf Club in Williamsburg, Pa. for his contribution to *Golf Course Management* magazine.

Winning supers in Jacobsen's Grand Prize Drawing:

- Donald Silven of Warwick Country Club in Rhode Island won a 27-inch Sony Triniton television.
- Tim Sedgley of Saticoy Country Club in California, Dexter Holtberg of Hilands Golf Club in Montana and Jonathan Peck of Los Angeles Country Club all won 19-inch Trinitrons.

Seed Research of Oregon recognized Dr. Richard Skogley, David Fleming and The Terre Company.

Skogley of the University of Rhode Island was recognized for excellence in turf research, Fleming of Singing Hills Country Club in California for top superintendent and Terre of New Jersey for marketing excellence.

EQUIPMENT

Lesco gets rights to mixing system

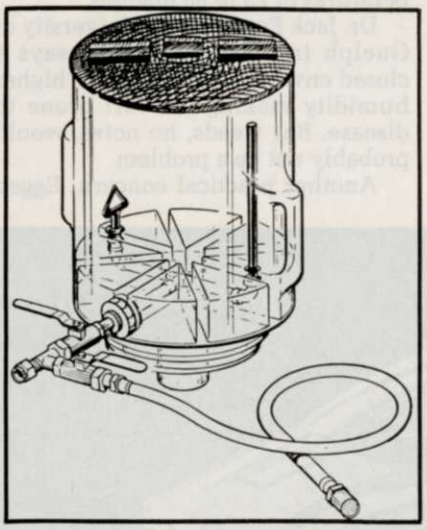
A Closed Mixing System for use with pesticide containers and wettable powder bags has been obtained by Lesco, Inc., Rocky River, Ohio.

"This system minimizes pesticide exposure during the most critical period, spray tank loading," notes Dr. Bruce Augustin of Lesco, who refined a design of Bob Brock, a golf course superintendent in the Washington, D.C. area.

The system mixes bagged pesticides into spray tanks without opening the bag. The rinsing action of the system efficiently empties wettable powder bags. The system is completely portable, allowing it to be used on any spray tank.

Wettable powder bags are opened by thrusting them on top of an arrowhead-shaped knife mounted on a spray nozzle. A water valve is opened, and the Closed Mixing System does the rest. All the operator needs to do is remove and dispose of the bag and triple-rinse the containment vessel by turning the valves back on three times.

A hole in the bottom of the containment vessel allows all product and water to run directly into the spray tank.



"We use ¾-inch pipe, which gives maximum pressure for a quick washout," notes Augustin.

The vessel can also be used for washing out one- to five-gallon containers, which are placed upside-down over another, taller nozzle.

Lesco hopes to have the Closed Mixing System on the market soon. For more information, call Dr. Augustin at (800) 321-5325 nationwide, (800) 362-7413 in Ohio.

ATHLETIC TURF

Real grass in a dome?? Maybe, say Toronto fans

Rose Marie Branson: tired of living in a plastic world

It was a meeting of the minds...Some of the best in turf science. And, a meeting of emotions...some of the best Blue Jays fans in Toronto. Together, it made for an historical day in the athletic turf industry: The first time that a North American city has seriously looked at putting natural grass in a new dome stadium.

Well, some skeptics might point out that years ago Houston tried it in the Astro Dome, but the grass died. No one has dared discuss the issue since.

Things have changed. The turf industry has changed. "The technology is available although it may not have been applied previously," says Dr. Jim Watson, vice president of Toro. "There are new construction techniques which were not available five to seven years ago. There are new management techniques. We know far more today than previously."

continued on page 12

1-2-3

"In case of accident..." This is a common phrase, but in the case of pesticide storage and use, it can be backed up by some valuable information.

Roger Cagle, superintendent at Indian Hills Country Club, Marietta, Ga., gave attendees at the GCSAA show some tips on surviving chemical accidents and—just as important—preventing them.

If an accident occurs, he says, the worst thing to do is to attempt to cover it up. Do the opposite:

- Inform everyone affected by the problem, including the greens committee chairman, the club pro and manager and members.
- Take action. Develop a plan to deal with the problem, keep a high profile and keep unaffected areas of the course in good condition.

A good prevention plan can reduce the possibility of accidents, Cagle says.

1. Store chemicals properly.

- Store chemicals in their original containers and keep them labeled.
- Isolate higher-risk chemicals.

2. Use proper application techniques.

- Train employees properly on equipment and chemicals.
- Clean spray equipment thoroughly after use.
- Calibrate the equipment frequently to ensure proper application rates.
- Maintain good records. If a problem does occur, good records can go a long way toward diagnosing them.

3. Color code the chemicals. This can be done by manufacturer or type. Doing so reduces the chances of mistakingly using the wrong chemical for a job.

DOME *from page 11*

The day of grass education was organized by Blue Jays fan Rose Marie Branson who says she's tired of living in a plastic world. *The Toronto Star* sponsored the seminar.

Besides Watson, Dr. Bill Daniel, inventor of the Prescription Athletic Turf system and Steve Wightman, field manager at Denver's Mile High Stadium, which uses a PAT system, addressed the crowd of about 100.

The proposed Toronto dome stadium may use natural turf.

The Toronto dome stadium will be built with a retractable dome. Daniel suggested leaving the stadium open most of the time, closing it only to protect people. Daniel says the underground pumps in the PAT system would help the turf to survive indoors.

"We're making a living area for roots," Daniel says. "We now have the technology to manage the root zone."

Watson says that turf variety would depend on what's available in the area, but recommended a fine-leaf tall fescue with a five to 10 percent Kentucky bluegrass.

"The most critical thing is light," Watson says. "You cannot give consideration to grass unless you're prepared to provide light."

Even if the dome is left open most of the time, lights will be necessary for those times when it is closed.

Watson says that 10,000 foot-candles of light are necessary for turf to grow at its full capacity. It can grow, however, with 2,000 foot-candles. He recommends at least 40 to 50 percent of full sunlight capacity.

The lights could be on retractable tracks, although such aspects are engineering considerations.

Heat is another consideration. Watson says roots grow in 55 to 65 degrees, while shoots need temperatures of 75 to 85 degrees.

Dr. Jack Eggen of the University of Guelph in Ontario, Canada says a closed environment may have higher humidity making the turf prone to disease. But weeds, he notes, would probably not be a problem.

Another practical concern, Eggen points out, is an external greenhouse to grow extra sod or store the turf if it's taken out each winter so trade shows can be used in the dome. Another option is to let the turf die and re-sod each winter with new sod. Or, the stadium committee may decide to maintain the turf year-round, with a raised floor for trade shows.

Wightman says that stadiums can be used for multi-purpose events, like rock concerts. He says the use of geotextile materials, such as Warren's TerraCover, to cover the turf before laying down plywood or chairs helps distribute weight, protects the blades, and allows the turf to breathe. When he used this system for the Bruce Springsteen concert, the turf received little damage.

Mile High Stadium can be converted from football to baseball in 13½ hours, says Wightman. This conversion includes completely moving the seats.

"We have overnight versatility and yet we have not sacrificied the safety and playability of the field," Wightman says.

Safety is the prime motivating factor in going with grass. Statistics prove that injuries occur more often on synthetic surfaces.

"Technologically I have no question about our ability to grow grass in a dome stadium," Watson says.

CHEMICALS

EPA, scientists call Milorganite safe to use

Researchers and federal environmental officials have stressed the fact that no link exists between amyotrophic lateral sclerosis—also known as Lou Gehrig's Disease—and Milorganite.

"You can continue to use Milorganite," says Alan Rubin, chief of wastewater solids criteria branch in the U.S. Environmental Protection Agency's Office of Water. "There has been no causal link between Milorganite and ALS." Rubin emphasizes that the cause of ALS, a rare disease that kills by slowly destroying nerves that control muscles, remains unknown.

Possible links between the disease and the natural organic fertilizer were first made in the Milwaukee *Sentinel* before quickly spreading to national media.

The link was first suggested after it was learned that three former San Francisco 49ers had contracted the fatal disease. Three out of 55 team members is an unusually higher incidence for ALS.

No one could confirm Milorganite was used on the field when the three played. But Dr. Benjamin Brooks, director of a research clinic at the University of Wisconsin-Madison, told the *Sentinel* that the fertilizer might have been the cause. Some research has suggested a link between the disease and exposure to a toxic substance in diet or environment.

In a televised interview in Milwaukee, Dr. Alfred Rimm, chief of biostatistics at the Medical College of Wisconsin, said Dr. Brooks was "out of his water"—that as a neurologist, he should stay out of epidemiology. Dr. Rimm also said there was no need for a study of Milorganite since there is no basis for the alleged link.

One television editorialist in Milwaukee accused the *Sentinel* of sensationalism in its handling of the story.

At this point, it is too early to tell if the allegations will have any effect on spring sales. Milorganite is manufactured from sewage sludge by the Milwaukee Metropolitan Sewerage District.

SEED

Turfseed supply may remain low

Though it is a bit early to tell for certain, indications are that the 1987 seed supply will be similar in quantity to

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Circle No. 140 on Reader Inquiry Card

last year's supply—not good.

Many of the shortages, says Gayle Jacklin of Jacklin Seed, would be a result of limited supplies in 1986 being drained. Because of heavy demands from the south, tall fescue supplies in general will be down a bit. Bluegrass will also be down, despite an increase by Jacklin to 80,000 growing acres producing about 58 million pounds of seed. "No carryover will cause the shortages," she said.

However, turf-type ryegrass supplies will be up 10 to 15 percent, but again, shortages from no carryover will keep supplies tight and prices up. Bentgrass also has been given an increase in acreage, up 35 percent, and supplies of Pennlinks, Penncross and Seaside should be good, she said.

For those who can hold on, Jacklin said 1988 could prove to be a good year for seed. With more acreage, bluegrass should be in good supply, and prices will begin to fall once again.

Jacklin made her observations at the Iowa Turfgrass Conference.

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CORPORATIONS

Company offers $285 million to purchase ChemLawn

Waste Management Inc. has offered ChemLawn president Jack Van Fossen $285 million to purchase the company. But Waste Management might not be the only company interested in buying out ChemLawn.

According to market experts, the fact that 4.1 million ChemLawn stock shares changed hands the day following Waste Management's offer might point to the possibility of other companies also being interested in purchasing the Columbus, Ohio-based company.

Another development was that stockholders bid ChemLawn stock up to $29 per share, two dollars more than Waste Management's offer.

In a letter to Van Fossen, Waste Management chairman Dean Buntrock wrote: "Should ChemLawn enter into discussions with any other party, we would expect any discussions conducted on an even and illuminated playing field. You may be able to demonstrate to us that there are values in ChemLawn that we have not recognized which would justify an even higher price."

Waste Management, one of the nation's largest solid waste disposal and recycling companies, is based in Oak Brook, Ill.

PESTICIDES

Acclaim! finally given registration

The Environmental Protection Agency has granted registration to Hoechst-Roussel Agri-Vet Co. for Acclaim! 1EC herbicide.

Acclaim! controls crabgrass, goosegrass and other grassy weeds. It can be tank-mixed with pre-emergence products as part of a planned program or used alone as a single-application post-emergence treatment. Acclaim can also be applied selectively to specific problem areas, eliminating broad coverage waste, Hoechst notes.

GOLF

Aerial photography aids superintendents

Aerial photography can help train new employees, says Pat Lucas, superintendent of Innis Arden Golf Club in Old Greenwich, Conn. Lucas, who spoke to the GCSAA conference, says aerial photography is a good manage-

continued on page 18

Trim ornamentals to desired silhouette. Spray Atrimmec.
Apical growth is stopped. Lateral branching occurs.
Trimming cost is reduced, ornamentals thicken up.

Featured photo is hedge in Nutley, N.J. treated May 8 and photographed July 15.

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SHORT CUTS

MIXING IT UP... Landscape managers mixing pesticides have more exposure than applicators, Dr. Bruce Augustin of Lesco told the audience at Maryland Turfgrass '87. "Be sure to use impervious aprons, gloves and maybe even a respirator when mixing," he said. He added that most turf pesticides used professionally can be bought retail. The only real difference is the concentration. Augustin said that windshield washer fluid has a higher toxicity than any pesticide you could use.

SPEAKING OF MARYLAND... Another speaker at Maryland Turfgrass '87, Dr. John Street of Ohio State University, said that landscape managers should concentrate on mixing nitrogen put on turf in spring and early summer. "The more nitrogen you put down, the more top growth you get," Street said. "Top growth shoots take priority over roots and rhizomes for available nitrogen in rapid growth situations. You don't want to take your turf into the summer stress period with bad roots." He added that more emphasis should be placed on fall and late-season fertilization. He said that spring green-up can be speeded up by two to four weeks with this type of fertilization, and that the greening-up period can be extended one to two months in the late season.

HEAR YE, HEAR YE... Knox Russell, landscape superintendent at the Bahama Princess resort in Freeport, calls it his "messenger plant." It's not uncommon to see initials carved in or other messages written on the clusia plant outside the front entrance of the hotel. "The leaves are soft," Russell explains. "It doesn't really hurt the plant."

'SUPER' GOLFER... Mike Apodaca, golf course superintendent at Reveneaux Country Club in Springs, Texas, won the 1987 golf championship with a two-day total of 144. This was his second GCSAA golf championship, the first coming in 1982. Gary Bennett of South Carolina, who was one stroke back after the first day, finished second at 145. The championship was played at Fred Enke Municipal Golf Course and Ventana Canyon Golf and Racquet Club.

TREE MAN... Dr. Alex Shigo, the retired chief scientist for the U.S. Forest Service, has completed work on two books concerning proper tree care. *A New Tree Biology* provides new information on pruning, defects, fertilization timing, tree starvation and numerous diseases affecting trees. The second book, *A New Tree Biology Dictionary*, is an expanded index for the first book, providing terms, topics and treatments for trees and their proper care. The two-book set sells for $61, which includes postage and handling inside the United States ($2 extra for each set ordered outside the U.S.). Orders can be sent to: Shigo and Trees, Associates, 4 Denbow Rd., Durham, NH, 03824.

PHOTOGRAPHY *from page 14*

ment tool.

"Go over aerial photos with new employees so they can get areas set in their mind," Lucas says. "But it's still not a substitute for going out in the field."

Lucas says superintendents need to follow a few simple steps to get a workable aerial photo of the course:

- Clear the course of all leaves and debris. The picture should be shot at a time when trees are dormant and no snow or ice is on the course.
- Avoid shadows. It's best to take the picture at noon.
- Take it on a day when the weather is clear.
- Allow adequate lead time for painting of the golf course.

How long this last step takes depends on the size of the course. Lucas uses a painting machine to paint an "X" about three feet across every irrigation head. He uses paint to outline all greens and fairways.

Use a reasonable scale for the photo. Lucas recommends that one inch equal about 80 feet.

"The photos can provide improved communication with crew members and greens committees," Lucas says.

To explain things, Lucas places a clear plexi glass sheet over the photo and draws on the glass rather than on the actual photo. For example, he will circle the areas which received wetting agents, how much, and what time the applications took place.

He does the same thing for tree maintainance by coding each tree with a number and letter. The number represents the hole; the letter shows the tree type.

He inputs much of this information into his computer so he can get printouts of work from past years.

CEMETERIES

Computers help cemetery managers

Preserving the nation's heritage is the responsibility of cemetery managers. Jan Burrows from the Cemetery Mapping Service says computers can help managers live up to that responsibility.

"Cemetery managers have the responsibility to create, maintain and preserve," Burrows told the Kentucky Cemetery Managers Association. "You are part of your community whether you have a monument or memorial park...20 acres or 100 acres."

At small cemeteries, landscape managers are sometimes asked to know where to find information on past burials. Families who come in

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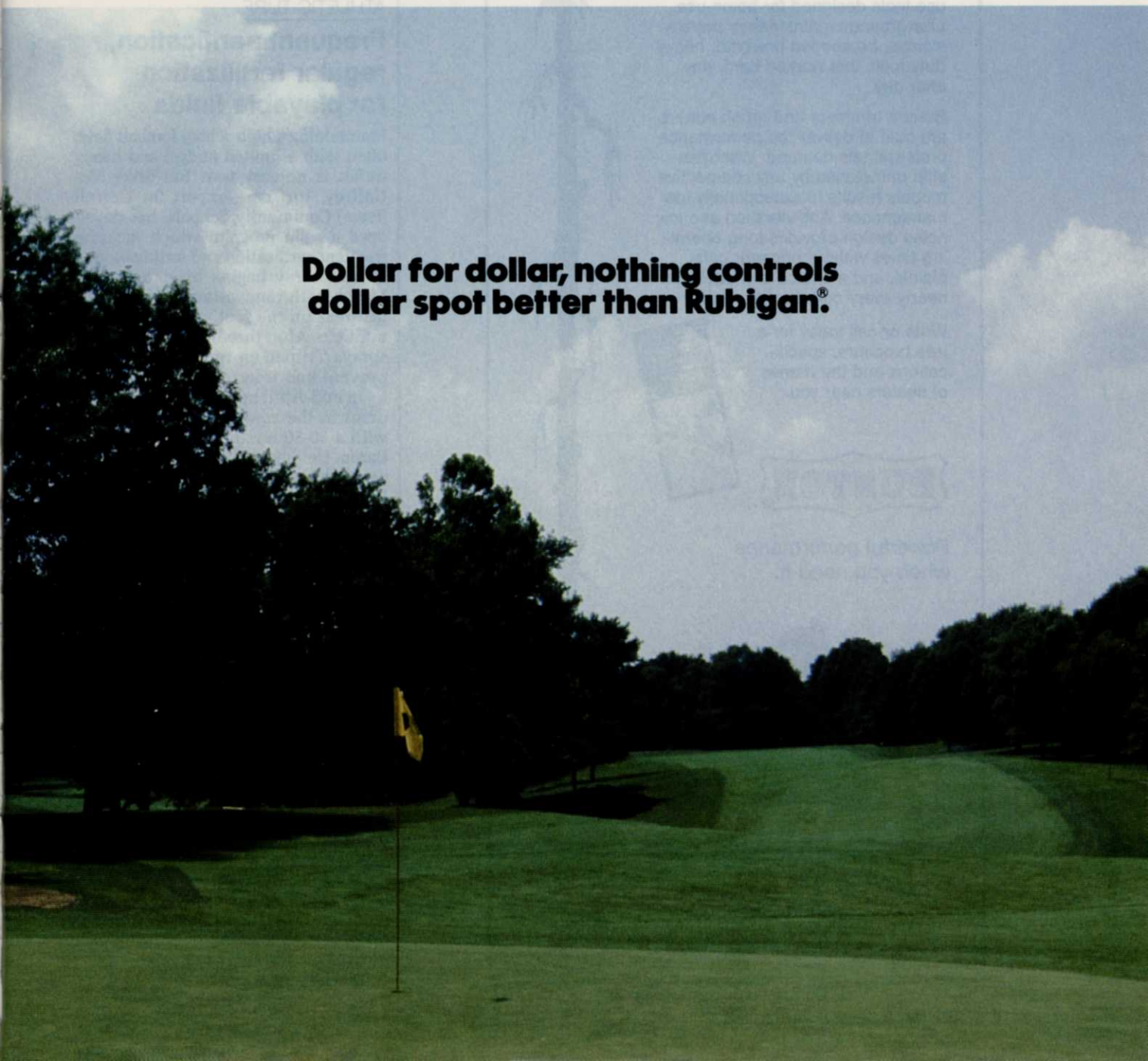

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from out of town may need to find out where a loved one is buried.

Burrows says custom-designed software makes that job much easier than looking through the cemetery.

Through such software, maps can be made of the cemetery. The maps can show sections of the cemetery, which lots are sold, and information about who is buried in which lots.

Burrows says all programs should have print-out capabilities in case the family wants a record. But, she warns, don't rely solely on the computer.

"I strongly believe in storage off premises," she says. "Keep extra maps in a safety deposit box. I know of one cemetery that lost 30 years of records in a fire."

ATHLETIC TURF

Frequent aerification, regular fertilization for playable fields

Maintaining a high school football field, often with a limited budget and heavy traffic, is no easy task. But Mike McCaffrey, turf care expert for Carroll (Iowa) Community Schools, has developed a solid program which includes frequent aerification and fertilization.

McCaffrey begins his program in March with renovation to heavy traffic areas on the football field such as midfield. After three or four weeks, he sprays Trimec on renovated areas to prevent knotweed.

In mid-April he aerifies the field and drags in the cores before overseeding with a 50-50 mix of Manhattan II and Baron. He then fertilizes with two percent siduron and ¼ lb. of nitrogen, and lets the field set for a month.

In May he applies two percent siduron again, and in another month applies Dacthal and 1 lb. of 19-4-6 fertilizer.

After a July 1 field evaluation, he applies ½ lb. of 18-5-9 for green-up, and in early August aerifies in three directions.

The third week of August he aerifies again and applies 21-2-20 at 1 lb. in preparation for the first scrimmage the next week. By mid-October he sprays with Trimec for broadleaf weeds.

His final treatment, in late October or early November, includes aerification in four or five directions and an application of 8-4-24 fertilizer for good spring green-up.

He irrigates on the average of 1¼ inches per week and keeps the grass at three inches, cutting in varying patterns three times a week.

McCaffrey suggests keeping play

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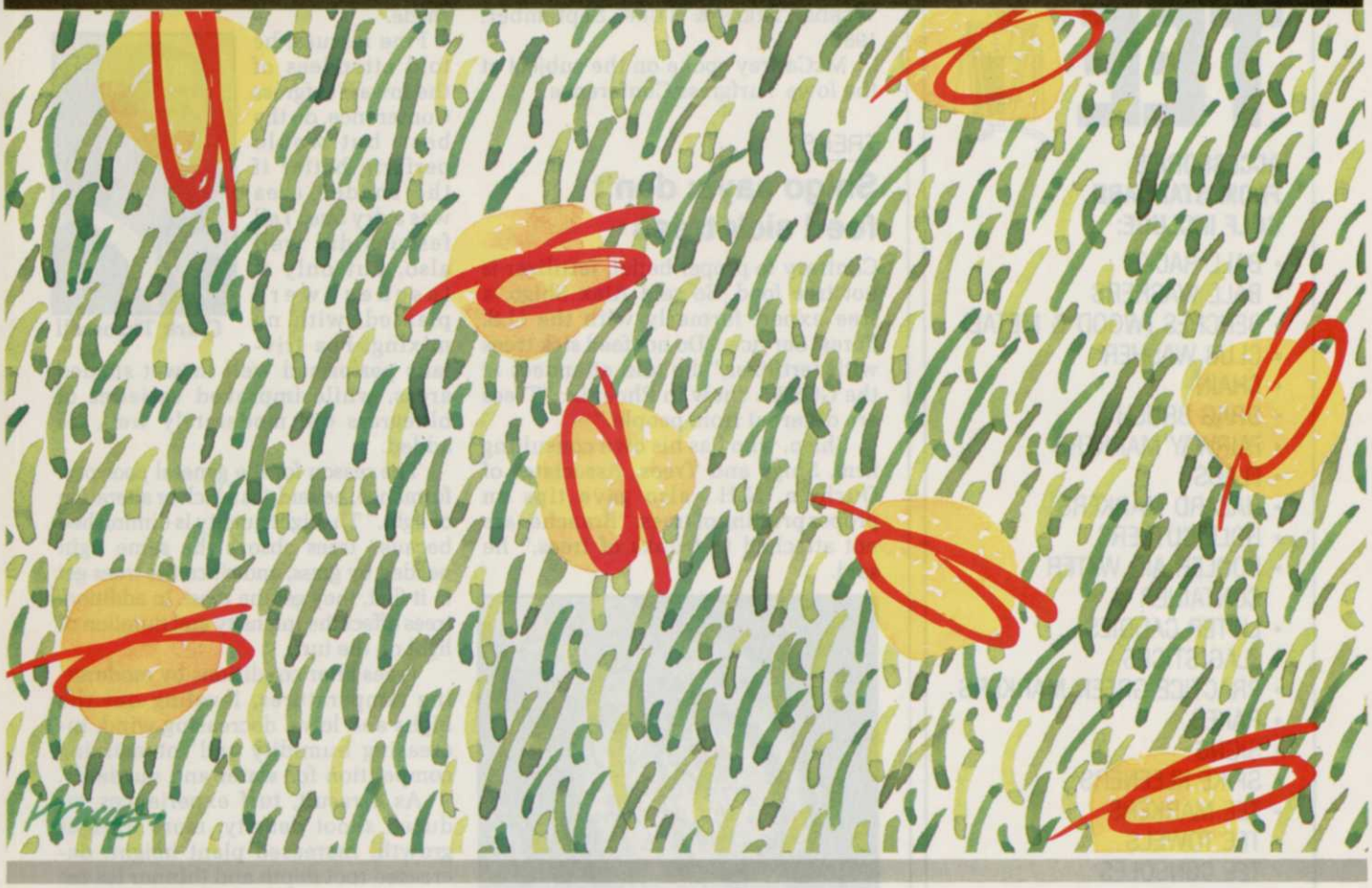

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on the field to a minimum, and perhaps most importantly, getting the parents and the school board on your side. For turf management, though, he follows the GRASS system reported in WEEDS, TREES & TURF, September, 1986.

McCaffrey spoke on the subject at the Iowa Turfgrass Conference.

TREES

Shigo says: don't feed sick trees

Contrary to proper belief, fertilizer is not tree food. So said Alex Shigo, a tree expert formerly with the U.S. Forest Service. "Do not feed sick trees with fertilizer," he told attendees at the GCSAA show in Phoenix. "Trees are different from people."

Shigo, who has his own consulting firm, Shigo and Trees, Associates of Durham, N.H., also gave tips on proper pruning of trees. "Branches are not attached to trunks of trees," he said.

He said there is a collar that the branch is attached to; the collar should never be cut. A flush cut removes the collar, doing damage to the tree and inviting fungal infections.

The proper method involves locating the branch bark ridge on the top of the branch, and the branch collar on the bottom. The cut should be made so that both remain on the tree.

Shigo added that wound dressing should never be used to promote callus growth. If the cut is done properly, the wound will close and form its own callus, or "doughnut," during the next growing season.

TURF

Most turf grasses not made for the shade

While humans love to sit in the shade on a hot sunny summer afternoon, the grumblings we hear while sitting there might be coming from the grass. While we might not, it would rather be out in the open sunning itself.

Clark Throssell, assistant professor of turfgrass science at Purdue University, notes that only a few cool season turfgrass varieties perform well in the shade.

Clark Throssell

Fine fescues, he told attendees of the Iowa Turfgrass Conference, do the best, but would perform better if the shaded area was a dry one. Tall fescues did well also, but only if fescues were planted, with no mixing. Poa trivialis performed well in wet shaded areas, while improved varieties of bluegrass did moderately well, he added.

The reason for the general poor performance, he said, "is a lack or alteration of light." The light quality is diminished because trees absorb the same light needed by grass, and since the trees get to it first, they get the most. In addition, trees affect the intensity and duration of light on the turf.

Trees alter conditions by moderating temperatures, leveling out the highs and lows, decreasing wind, increasing humidity and intensifying competition for water and nutrients.

As a result, turf experiences reduced shoot density, more upright growth, increased plant height, decreased root depth and thinner leaves and cell walls, causing fewer carbohydrates to develop in the cell walls, reducing photosynthesis and transpiration rates and making them more susceptible to disease.

But things are not hopeless, he noted. Certain cultural practices can help turfgrass performance. Start by planting open canopy trees. If it's too late for that, then prune lower limbs and try to thin dense tree crowns, he said. "By removing dense vegetation, there's better air movement," he said.

Tree roots can also be pruned, but Throssell recommends using caution to avoid killing the tree in the process. Also, remove fallen leaves from under the trees. The grass will grow the best when trees have thinned in the fall, and have yet to thicken in the spring. In all, he said, the grass should receive three to four hours of direct sunlight each day to grow well.

Other cultural practices which help include raising the mowing height, irrigating deeply but infrequently and controlling traffic. Also, avoid excessive applications of nitrogen. "Don't force any more growth," he said. "The grass is struggling as it is."

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Ex-arborist association secretary passes away

Dr. Paul Tilford, executive secretary of the National Arborist Association from 1940 through 1965, passed away recently.

He spent his early career as a plant pathologist at the Ohio Agricultural Experiment Station in Wooster, heading up research on diseases of shade trees and other plants. After retiring from NAA in 1965, he became Mayor of Wooster.

Ron Dietz

Yvonne Fenner

Ralph Smalley

John Piersol

Bob Still

Duane Brooks

Ron Dietz, Dietz Hydroseeding Co., Van Nuys, Calif., was named the Regular Memeber of the Year for 1986 by the California Landscape Contractors Association. CLCA also announced that **Yvonne Fenner** was appointed meeting coordinator for the association.

The O.J. Noer Research Foundation has appointed **James Spindler** research coordinator. Spindler is an agronomist with the Milwaukee Metropolitan Sewerage District.

Ralph R. Smalley, a former soil fertility professor in the State University of New York system and at Cornell University, was awarded the Citation of Merit by the New York State Turfgrass Association. This is the Association's highest award.

The Professional Grounds Management Society has honored two people with the Member of the Year Award for 1986. They are **Jeffrey A. Bourne**, chief of the Bureau of Parks of Howard County, Maryland, and **John Abernathy, Jr.**, landscape supervisor for the city of Lenoir, N.C. Bourne is the president of PGMS for 1987; Abernathy a member of the Board of Directors.

John R. Piersol has been promoted to chairperson of the Golf Course and Landscape Operations programs at Lake City (Fla.) Community College. Piersol has been a landscape instructor at Lake City since 1974.

The Golf Course Superintendents Association of America has named **Bob Still** media relations manager. He also serves as the tournament director for the Len Dawson Celebrity Classic in Kansas City, Mo.

E-Z-Go Textron has made a number of promotions. **David A. Johnson** has been named vice president for marketing. In addition, **J. Hampton**

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Manning has been promoted to vice president for sales. The company also promoted **Michael Aponas** to regional manager for Midwest sales, and **Robert Lee Mossman** regional manager for Southwest sales.

Carl R. Tanner has been appointed business manager, turf products, in the Vegetation and Pest Control Ventures Department of American Cyanamid's Agricultural Division.

Duane A. Brooks has been named sales representative for Tennessee by the Lesco Inc. Brooks was previously the superintendent at Rustic Woods Golf Course in Columbia Station, Ohio.

Tom Trayser

INDUSTRY

Professionalism a must for business to grow

Coming from The Andersons, a successful company based in Maumee, Ohio, vice president Robert Scobee understands the need for professionalism to keep his company growing. But, he told attendees of the Iowa Turfgrass Conference February 18, landscapers and lawn care operators also need to be professional to operate a successful business. "The lawn care industry gives outdoor visible pleasure to the world," he said. "You have to please customers, preserve the environment and manage people."

Robert Scobee

The industry, he notes, has a number of components: research, either by universities or private companies; manufacturing; distribution; marketing; and service. "All are involved in the industry," he said. "The industry is the sum of the total group." Professionalism fits into all these parts.

"The term 'professional' can be used two ways," Scobee explains. As a noun it refers to a person who does something with great skill. As an adjective, the term refers to a person who is worthy of the high standards of his profession. "We have an obligation to the industry which provided us a livelihood," he comments.

Good, clean competition promotes professionalism in the industry. Scobee added that good management, the ability to keep the predominantly white-collar customers happy, along with getting employees to act and look professional work toward building the "professional" reputation. But, above all, Scobee emphasized, "there is no lasting success without quality."

ASSOCIATIONS

ALCA installs 1987 officers

The Associated Landscape Contractors of America installed its 1987 officers at its annual convention in San Antonio, Texas. Newly-elected officers are president Joe Carpenter; president-elect Bruce Hunt; vice presidents Ron Kujawa, Bob Maronde and Eldon Dyk; and secretary Ron Mark.

Also serving on the Executive Board of Directors are Michael Currin, Donald Wilson and Melanie Reinhold Sawka.

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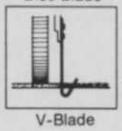

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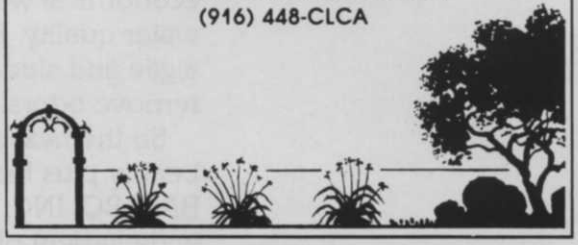

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SYLVAN SETTING

Lake Barrington Shores' attention to detail has made the Chicago-area development an award winner.

Country Club condos overlooking the golf course. First floor is Pinehurst, second floor Cypress.

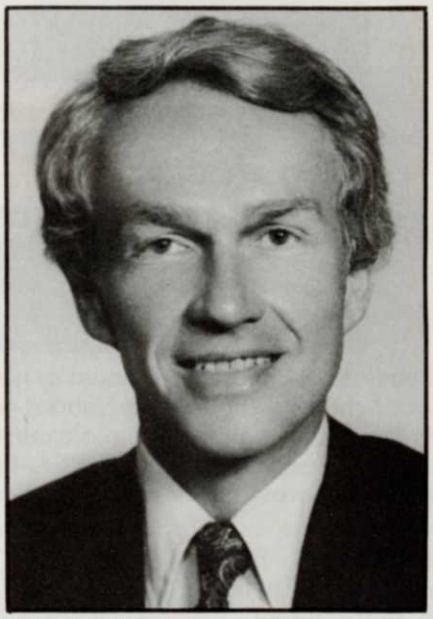
In the not-too-distant past, little thought was given to the landscape during construction of a housing or resort community. Often, a perfectly good setting was destroyed to make room for the buildings, then a landscape was designed around them.

However, efforts are being made to correct that. With careful planning and a lot of effort, the natural beauty of a development can remain, and often is enhanced.

"It was a conscious decision at the outset to use the natural setting at Lake Barrington Shores as a canvas and improve it as much as possible," says John Smolenski, director of sales and marketing at the 520-acre residential/resort community near northwest suburban Barrington, Ill.

Lake Barrington Shores, a $200 million townhome and condominium development designed around 100-acre Lake Barrington, received a "Best of 1985" award from the Chicago *Sun-Times* in February, 1986, for the year's finest use of land among home developers. In addition, ILT, the landscape management company working on the community, won a gold award from the Illinois Landscape Contractors Association for environmental improvement in multi-family landscape maintenance.

Bud Wehler of Lipp Wehler Peterson Ltd., a landscape architect company in Geneva, Ill., had the overall responsibility of designing and maintaining the woody landscape. When construction was ready to begin on the community in 1974, Wehler says, "We walked the site before the first home was built. Lake Barrington is partially situated in an oak forest," Wehler notes. "On one side of the lake, we had many large specimens and the supporting vegetation to work with."



John Smolenski says Lake Barrington Shores enhances the natural surroundings.

The other side of the lake was the opposite. That area was a plowed field on the original property—a farm, still bare and furrowed. That field became the site of the 18-hole, 6,405-yard championship golf course. "But, we still had to consider trees and plantings to act as a buffer between the course and the homes that would line it," remembers Wehler.

After determining the site's natural assets, Wehler talked with Edward and Kenneth James, co-developers of the property, and Harry Reid, California-based architect of the homes.

They emphasized the need to preserve the area's natural woodland beauty. Wehler's company worked with the site planner to indicate which trees, or clusters of plant material, should be preserved.

"The result is that, in some instances, a house layout may change a few feet, or the road layout is adjusted to avoid disrupting an area we'd like to preserve," Wehler says. Wood snow fences were put up during construction to mark which areas to preserve.

A group effort

"Usually groups of plant materials, not just one tree, are saved," Wehler

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says. Since oaks feed within the top six inches of soil, an area of secondary plant life around the tree is preserved "because plants protect each other," he explains. After certain specimens were selected, other measures had to be taken after construction began.

"In some cases the grading had to be changed to redirect the drainage. Or if a wall or walkway was too close, a retaining wall had to be built around the tree and plant material," Wehler notes. Some specimens from the forested area were transplanted to the area bordering the homes along Lake Barrington Shores' golf course and common areas. Some evergreens that were moved were as tall as 35 feet.

Plant selection varies with each new condo phase built, but the techniques of preservation and relocation are pretty much the same, Wehler says. (Landscape planning has begun for the 11th phase of construction. More than 1,050 of the proposed 1,360 units have been completed.)

"We work with the larger and existing plant materials, and compromise with the construction company to save some specimens, transplant some or lessen the destruction of others," Wehler says.

After the homes are built, smaller flowering plants, low evergreens and ground cover are installed. Various types of trees are planted, including ash, honey locust, lindens, sugar maples and more ornamental varieties, such as river birch, flowering crab apples and alders.

"We also select a range of plants that will provide a landscape 'show' for all seasons," Wehler adds. "For example, Cornelian cherry blooms in early spring before forsythia; then come red bud and lilacs. The flowering crab apple trees bloom in early spring. Potentilla with yellow blossoms, spirea and hydrangeas with white blossoms, bloom in summer.

"Dwarf shrubs add greenery and changing leaf colors in fall and the witch hazel shrub blooms in fall," Wehler explains. "Later, evergreens inject color and a softening effect into the winter landscape."

Down to size

Smaller blossoming trees, shrubs and evergreens work to keep buildings in human scale. "The plants bring buildings down to a life-size scale and soften the structural lines," Wehler says. "Homesites literally are part of the landscape.

"What we've done is keep the specimen plants in scale with the building," he adds. "It looks good as soon as (the owners) move in."

This same principle applies to the landscaping done around the common area buildings at Lake Barrington Shores. Near the golf clubhouse, which recently underwent a $250,000 expansion, Scotch pines were planted to complement an existing group of sugar maples that's being preserved. To add further visual softness, red jade (a type of weeping crab apple tree) was planted nearby.

So much importance is placed on restoration and preservation that the condominum association even has a special assessment to replace dead trees.

At Lake Barrington Shores, avid golfers can tee off just a few steps from home.

Wehler estimates a 1:1 ratio between man-made environment and the natural environment. "Keeping a natural-looking community is important," sales director Smolenski stresses. "This 520-acre site was selected because of its natural beauty. The homes have natural cedar siding and shingles. The preservation or restoration of plants and trees is important. This is not 'bulldozer country.'"

"It all blends into the landscape," Wehler adds. "Everything is oriented toward these natural spaces."

Smolenski says that so much importance is placed on restoration and preservation that the condominum association even has a special assessment to replace dead trees in the 35-acre private forest preserve.

Attention to the landscaping around the homes works in harmony with efforts to preserve or restore the naturally-wooded areas to create a lush and lasting forested community. "We plan landscaping for the next 25 years," Wehler notes.

Mature oaks, willows and pines which line Lake Barrington are proof that the years only magnify nature's beauty. Lake Barrington Associates is currently offering homes priced from $118,200.

The development has won several awards for attention to landscaping and conservation, including citations from the Home Builders Association of Greater Chicago and the National Arborist Association.

Diversions offered by Lake Barrington Shores dwellers are fishing, sailing, canoeing, bathing on a huge sand beach adjacent to the community marinas, golfing and tennis (10 courts). Residents can also enjoy a 35-acre private forest and wildlife preserve, a three-mile jogging and biking path, and a clubhouse complex that includes both outdoor and indoor swimming pools.

Construction is expected to be completed within five years. The project itself will cover nearly 20 years.

"The developers found a terrific place and played up the natural surroundings," Wehler comments. "They've put people in there without disturbing the environment. I think that's quite an accomplishment."

It's an accomplishment worth noting — and one worth copying. **LM**

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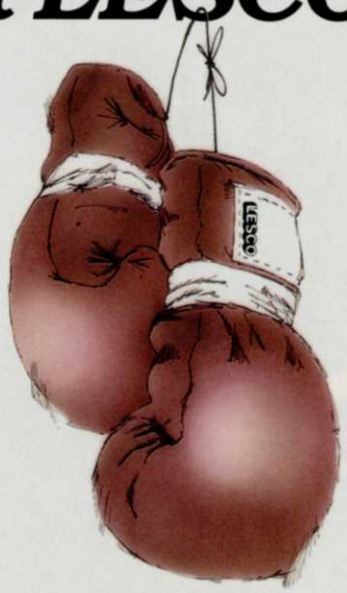

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J-26

ROYAL RESORT

The Bahama islands are a popular vacation spot. For those who escape want to luxury, the Bahama Princess resort is the place to go.

by Heide Aungst, associate editor

It's a world where the paradox rules...

A world of high-rolling casinos and low-rolling tides...poverty-stricken natives and wealth-laden tourists...the local straw market, the imported drug market.

The only constants on Grand Bahama Island are the halcyon, turquoise ocean and the tranquil, emerald-green landscape.

The Bahama Princess Resort—country club, hotels, villas and casino—sports one of the most developed landscapes on the island, including a Japanese garden and two golf courses.

The sophisticated landscape can be credited to superintendent Knox Russell, one of the few Bahamians educated in horticulture. He received his B.S. from Florida A&M in agriculture and returned to Freeport five years ago to work at the Princess.

He attended A&M on a full scholarship, graduating at 19. "I wasn't the brightest guy who applied for a scholarship, but because I decided to do agriculture, I got it," he says. "If you're fortunate, smart and lucky enough to get a scholarship, you go to college."

But it's tough to find Bahamians educated in any agricultural area. Although food could be grown on the island, Russell says about 90 percent of all goods are imported.

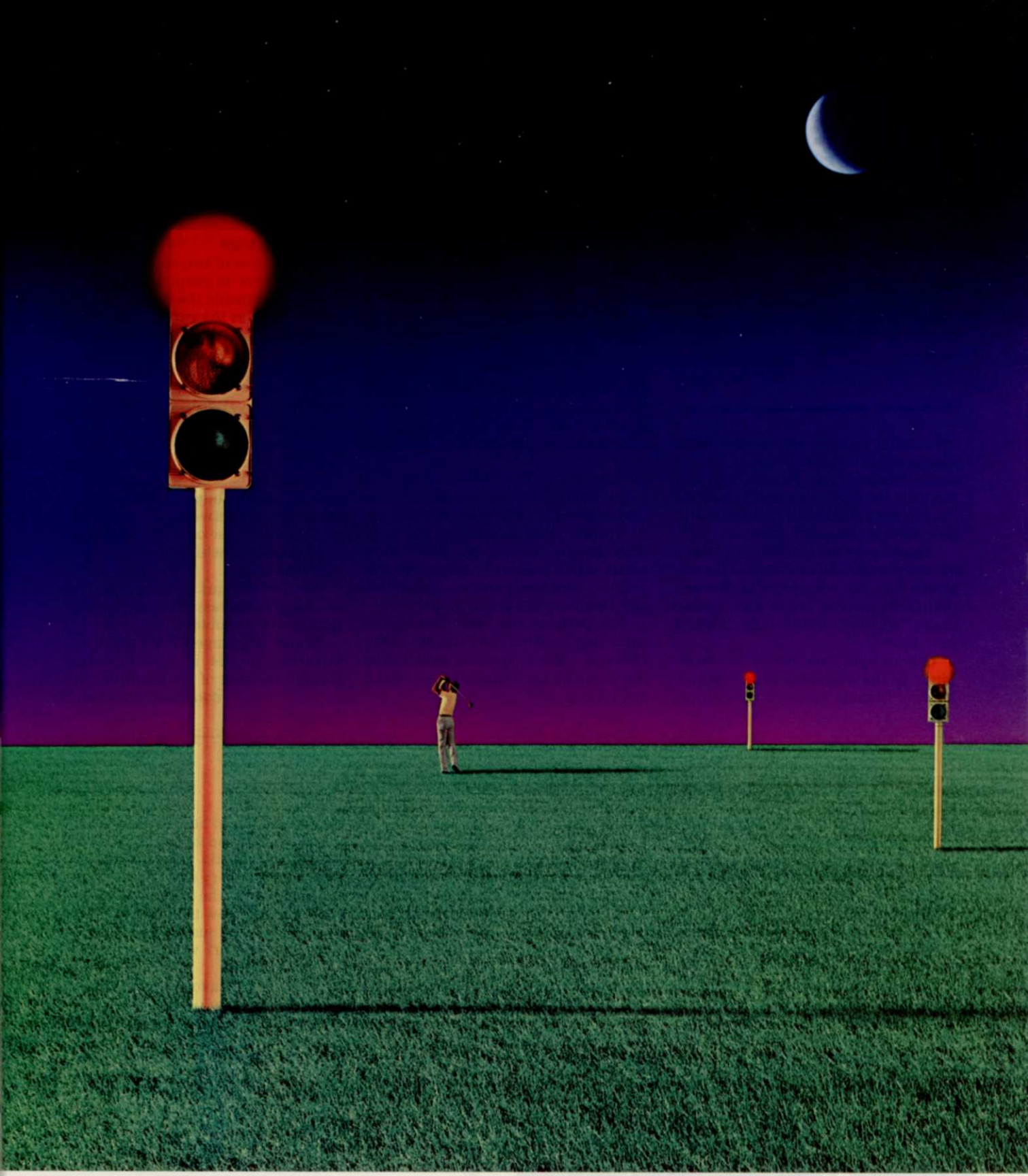
"Kids in school here scorn this kind of work," Russell says. "There's a serious drug problem here. They see a 24-year-old with a Mercedes parked in the driveway as more successful than someone with a master's degree."

The average yearly income on the island is about $8,000 tax-free, says Russell. The Princess is the largest employer.

The superintendent's job was held by an "expatriate," but the Bahamian government rules that when a native is qualified for a job, the foreigner must surrender the job.

Colorful creations

Russell's first project at the Princess was to renovate the landscaping at the Bahama Princess Tower, the palace-like hotel adjoining the casino. (The property has two hotels). But as he walks through the property, he coolly criticizes the overwhelming greenery everywhere.



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'Kids see a 24-year-old with a Mercedes parked in the driveway as more successful than someone with a master's degree.'

—Knox Russell
Bahama Princess Resort

Landscape superintendent Knox Russell is one of the few Bahamians educated in landscape management.

"We suffer here on the islands landscape-wise," Russell says. "They accept designs from Florida, and half the time the designers don't even see the property, so there's problems with tree roots or too much greenery."

Annuals are too expensive to plant, except occasionally in front of the entrance sign. So, where he can, Russell plants flowering trees and native plants which provide color almost year-round.

One unique tree, native to the island, is the "powder puff," which blooms fuschia flowers resembling powder puffs. The "firecracker" is a plant named for its hot-pink buds which literally pop when stepped on.

Crotons used in many of the beds provide eye-catching purplish color, while salvia bursts of red, purple and yellow. Oleanders and bougainvillea also break up the green monotony.

But perhaps the most recognized color surrounding the Princess is the hibiscus. "It's a common practice to use it as a hedge," Russell says, "but I just let it grow."

Hibiscus flowers are often used to decorate tables in the restaurants.

Inside/outside

Russell's crew of two supervisors and five workers is responsible for all plants used inside the Princess buildings, as well as the surrounding landscape. The country club part of the resort sits on 36 acres, of which about 25 are grounds. It was built in the early 1960s. The Tower, built across the street several years later, has 25 total acres.

Several of the restaurants are only open for dinner, which makes it tough for hanging baskets to survive long. Russell usually buys 40 plants and rotates 20 each between the restaurant and a greenhouse on the property. He uses dracaena which thrive in low-light conditions.

Most of the turf on the property is St. Augustinegrass. Frequent irrigation can be a problem.

Water is pumped from small circulating ponds in the Japanese Garden in front of the country club.

continued on page 38

AS GOOD AS GOLD

A vast array of gold and gems is sold throughout the Bahamas. Emeralds are the prize.

That made it easy to name the Princess' two golf courses, which stretch a combined seven miles: just call them the Emerald and the Ruby, and maybe they'll play like jewels.

But jewels often need polishing, as new superintendent Shervin Bastian is finding out. Bastian has been in his position just six months, although he's worked on the crew for 10 years. He inherited his position when the former superintendent couldn't get his work permit renewed by the government.

"It's hard, hard work," he says. The hardest part, he says, is not having an assistant. When he was promoted from assistant to superintendent, no one was immediately promoted to assistant. So his work schedule averages 12 hours a day, usually every day.

But with a crew of 24 year-round, the courses receive the care of a prized gem. And his new title allows him some special privileges. "Before, I'd just go and work. But now, being in charge I get to work with the people who play the course," Bastian says.

While meeting the guests is his favorite part of the job, the traffic is his biggest challenge.

The Princess is the island's largest resort, and though no one seems to keep statistics, the rounds of golf played during the prime winter months is overwhelming.

"It doesn't always look good under all that traffic, but there's nothing you can do about it," Bastian says. "Once we had 177 carts out and that was not enough. Guests had to wait to go back out."

Bastian treats the two par-72 courses the same. The biggest difference between the two is the water. Lakes affect five holes on the Ruby and only two on the Emerald. But, Bastian says, the Emerald has some tougher holes.

The crew rebuilt the greens three years ago, doing one course at a time in the summer off-season. "There

continued on page 38

Superintendent Shervin Bastian says working with the guests is his favorite part of the job.

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Continued from page 36

The water is treated with copper sulfate and Aquashade to control weeds and enhance color.

The front system is somewhat antiquated with heads which must be manually operated. The system at the back of the property is automatic. When the water has been used in back, the pond is too low to draw water for the front.

"The hardest part is keeping the lawn green with all the shade," Russell says. In heavily shaded areas and where weeds are a problem, Russell either clears the bed and lays peat rock or uses a drought-tolerant groundcover, such as wedelia, which grows naturally on the beaches.

The numerous trees on the property range from towering grand old ficuses to lanky palms of every variety, including coconut, royal and the traveler's palm, brought to the island by Christopher Columbus. Even cold climate trees like the podocarpus grow on the property.

It's not uncommon for workers or guests to pick coconuts and drink the juice, or to nibble on exotic fruits like papaya, mango, Japanese plum (loquat) and Barbados cherry. In fact, the Chinese restaurant at the Interna-

The picturesque 13th hole on the Ruby sports native royal palms.

GOOD AS GOLD

continued from page 36

was a lot of common bermuda in the greens, and that was hard to maintain," Bastian explains. "When you cut low, you'd get a lot of brown spots."

During the summer, Bastian mows greens daily at 3/16 of an inch, but raises the height to 1/4 inch during the winter, when turf growth slows.

He fertilizes frequently using Milorganite and slow-release sulfur-coated products. Fairways usually receive a 16-4-8 fertilizer.

With four Jacobsen greensmowers, Bastian says the crew can finish the greens on both courses in 75 minutes.

Other major equipment includes two Jacobsen fairway mowers and a Toro Sand Pro sandtrap rake.

The crew mows fairways only once a week in the winter, but every day in the summer. It's important to note, however, that summer in the Bahamas runs from May to December.

During hot, dry summers, the courses are watered daily. Temperatures in the winter can still get into the 80s, so the courses are watered at least every other day then.

The Princess has its own sewage treatment plant, so the courses are irrigated with effluent water. The manual irrigation system on the Emerald is labor intensive, but the Ruby has pop-up sprinkler heads.

Despite frequent watering, disease is rare on the Bahamian courses. "I haven't seen a case of disease in the 10 years," Bastian says. He credits the former superintendent with knowing how to prevent it.

Bastian's decade of experience has kept the courses in prime shape during the transition. "It's not only experience, but you need an education about turf, too," Bastian says. He plans to take a short course in Florida, where conditions are similar to the islands.

With the right combination of education and experience Bastian will certainly keep Freeport's royal resort courses looking as good as gold.

—Heide Aungst

A FLORAL TRIBUTE

In 1492, Columbus sailed the ocean blue... and discovered America. Right? Well, despite recent controversy on the subject, it is at least a fact that he discovered the Bahamas.

Freeport and Lucaya, the two cities on Grand Bahama Island, are rich in history, but most of it doesn't date back as far as Columbus' voyage.

In 1960 two Americans, Wallace and Georgette Groves, envisioned the island as a modern city, like those in the states. Wallace Groves set up an agreement with England that the island would be developed and remain tax-free until 1999.

That year, the Supplement Agreement, broadened the scope of the island's Hawksbill Creek Agreement to allow the Bahama Port Authority to expand the island into a resort and residential development. In less than a decade the island's population surged from 2,000 to 25,000.

On July 19, 1973, the Bahamas declared their independence from Britain.

Although 1973 will be captured in history books for the freedom from England's rule, it will be remembered among nature lovers as the year the Garden of the Groves opened.

The fact that both happened the same year is sheer coincidence. The Grand Bahama Development Company actually began building the gardens three years earlier as a living tribute to the Groves' contribution to Freeport.

Although Georgette Groves died early this year, Wallace Groves still occasionally enjoys the serenity of his gardens.

"I used to like it when he was active here. He took a great interest in the place," says Wesley Saunders, superintendent of the gardens.

Saunders oversees the crew of five which maintains the 12 acre gardens. He received an associates degree in landscape and design from Lake City Junior College in Florida and has managed the gardens for seven years.

The gardens feature plants from throughout the world, like the crown of thorns from Madagascar, the Chinese snow queen hibiscus and the Manila palm of the Phillipines. Plants are marked for the education of garden visitors.

"Most plants have to be tough, hardy plants because we cut them back often," Saunders says. "We don't do too much with annuals."

Despite the lack of annuals, color explodes in the garden with red hibiscus, red bougainvillea and flowering trees like the Powder Puff. "During June we have spectacular color when the Royal Poinciana trees bloom," Saunders says.

The gardens offer a variety of features, including a home for pink West Indian flamingos, the bird of the Bahamas, and an authentic replica of a Bahamian church which served the island's original logging town, Pine Ridge.

The gardens' design allows visitors to wander over several wooden bridges into specialty areas, such as the unique cactus garden and the fern garden.

"We dug out a gully with a tractor and put boulders along the sides to create humidity for the ferns," Saunders explains. Water from a natural spring is pumped through the fern garden.

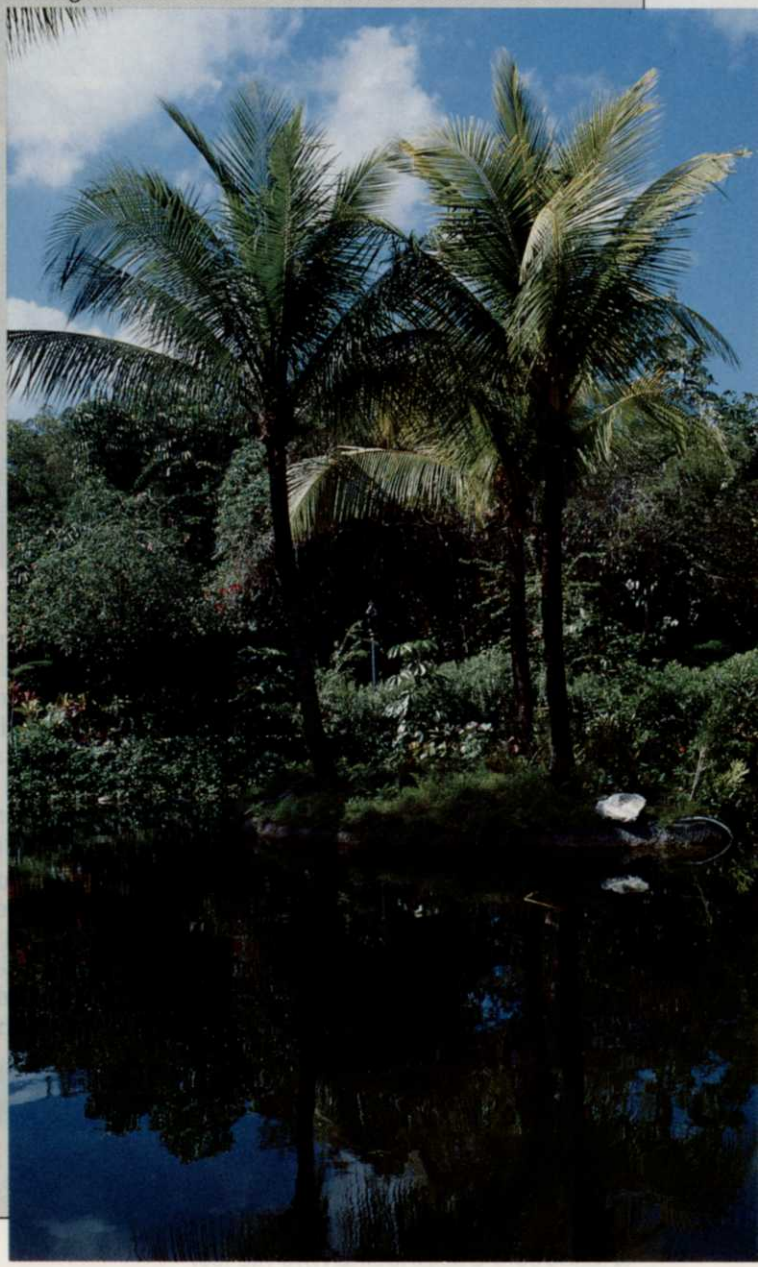
Most of the water in the gardens is circulated throughout the gardens and used as irrigation. Saunders treats the water with Aquashade and copper sulfate. He also tried a weed-eating fish, but he says it caused more problems than it helped.

Since Georgette Groves died, the gardens have been going through a renovation.

The water system, which creates numerous waterfalls throughout the garden, has been shut down for repair. Saunders also expects to get two trailers of new plants shipped in from Florida.

The crew usually changes beds completely every

Native palm trees stand out among plants from throughout the world at the Garden of the Groves.



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Circle No. 114 on Reader Inquiry Card

tional Bazaar near the Princess regularly picks the nuts off the resort's lychee trees for use in their specialty dishes.

No chemical controversy

Island landscaping is similar to the tropical areas of Florida, but Russell says differences do exist. The biggest is the soil.

"Culturally, their soil's great compared to ours," he says. Most soil on the property is a specially mixed combination of sand, peat moss and "lots of fertilizer." Russell uses a slow-release sulfur-coated 10-10-10 in the mix.

He fertilizes turf four times a year using a sulfur-coated 32-16-4. Last year, Russell aerated for the first time. "I saw a big improvement, but we only went one way," he says. "We're going to do it again."

Turf diseases are rare, which may be because of the constant climate. Temperatures rarely drop below the 50s at night or above 90 degrees during the day.

Although snails sometimes give him problems, Russell applies insecticides only as needed. "The more you spray, it gives the pests a chance to build up resistance."

When he does treat the area, he uses Sevin, diazinon or Dursban granules. Royal palms, many of which were wiped out by lethal yellow , are sprayed three times a year.

The Bahamas does not have any agency similar to EPA. Chemical barrels are disposed of at the city dump. And should a chemical, such as diazinon, be banned in the states, Russell says it may still be possible to get it in the Bahamas.

But living on an island does create problems in getting equipment. Most of the equipment used in Freeport is Jacobsen, so that parts can be exchanged between the golf courses and hotels. Russell, however, also praises his Bobcat rotary mowers and Toro riding mower.

Russell works closely with the Princess' golf course superintendent Shervin Bastian in sharing both equipment and turf knowledge.

The two golf courses compromise seven miles of land adjacent to the hotel. But, then, that's another story. **LM**

A FLORAL TRIBUTE

continued from page 39

three years. This spring Saunders plans to renovate the oleander beds.

Disease is rare in the gardens, but "those darn chinch bugs" are another problem, says Saunders. He treats them with Dursban, diazinon or ethion. Cutworms also give him problems after frequent rains.

The combination of rain and frequent irrigation in the summer makes fertilizer a must. Saunders uses Milorganite in hanging baskets and 6-6-6 product on the other plants.

He uses Roundup on the walkways to keep them clear of weeds.

The traffic through the gardens creates some problems for Saunders. On Tuesdays, tours of more than a thousand people traipse through the gardens.

But despite the traffic, the gardens remain a colorful place of peace and beauty.

— *Heide Aungst*

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LANDSCAPE MANAGEMENT

LANDSCAPE MANAGER OF THE YEAR

LANDSCAPE MANAGEMENT magazine and the Professional Grounds Management Society present their first Landscape Manager of the Year award.

by Jeff Sobul, assistant editor

The drum roll, please! Ladies and gentleman, LANDSCAPE MANAGEMENT'S first Landscape Manager of the Year is Michael Ray Hugg, landscape supervisor for Metro National Corporation, Houston.

The innovative Hugg has been landscape supervisor since joining Metro National seven years ago. He oversees a staff of 22, adding eight during peak season.

That staff is responsible for 19 company properties from apartments to hospitals and 11 city street esplanades.

On-the-job innovation

Hugg is innovative, having designed a very efficient computerized sprinkler system tied into one of the company's energy management systems. "The automatic controller is replaced by tying the wires into a series of multiplexer boards depending on how many stations the system has, which in turn is tied into the building's energy management panel."

With this system, Hugg has the ability to set and change start dates and times from a portable computer in his office. "I can also turn any sprinkler system that is tied into an energy management system on or off without

Metro National pays for all construction and maintenance of five city esplanades.

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leaving my office," he adds.

"I have almost unlimited power in start times. If a station normally has a 20-minute run time on a conventional clock," he explains, "I can have that station run two minutes at a time, with 10 different start times if I want to." This eliminates wasted water due to runoff and saves money, he says.

The operation runs through facilities management software and a modem used to access any sprinkler system in the company that is tied into an energy management system. For this, Hugg credits Metro National's construction management, which sets up the energy mangement programs. "The operation is similar to golf course irrigation programs run by computer," he says, "but with many more options and capabilities."

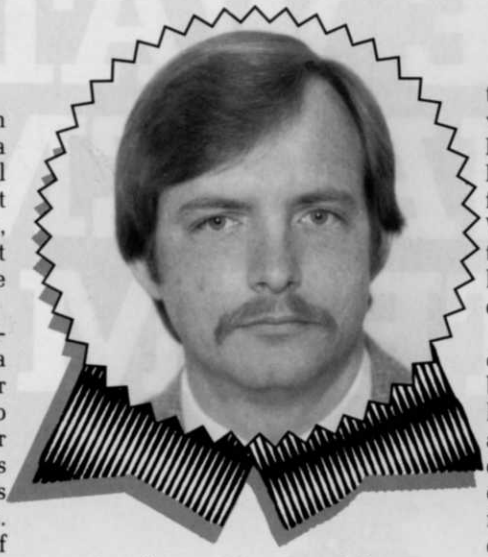
While the Houston area does experience drought conditions at times, Hugg says the local government has not set a permanent restriction on water usage. But, he adds, "I look for that to hit our area in the not too distant future."

Successful schedule

This efficency has resulted in an effective turf maintenance schedule which Hugg developed for use on all of the property his staff maintains.

"The preventative pesticide program takes care of most of the problems," he says. "We go back and spot treat where necessary."

His program includes fertilizing five times yearly. The first application, in early spring, is done in combination with atrazine for preemergence weed control on the St. Augustinegrass which covers all of the company's property.



1987 Landscape Manager of the Year: Michael Hugg.

An application in early June is supplemented with Dursban to take care of the first wave of chinchbugs, which Hugg calls a major problem.

In mid-July, he lays down Oftanol granules to finish off the chinchbugs and prevent grubs. His crews spot treat with liquid Oftanol if areas show signs of grub activity.

His fungicide program includes three applications of Chipco 26019, one every 28 days beginning in September. This takes care of the brown patch that occasionally attacks the turf. His ornamental care schedule includes two applications a year of a pre-emergence herbicide. The company employs one full-time sprayer to make all these applications.

Hard times

Unfortunately, Hugg can't do a lot of the things he'd like, even though his work is good enough to have won four PGMS awards in 1985. Economically, Houston relies heavily on dollars from the oil and petroleum industry. With crude oil prices falling during the past five years, the oil companies have hit on hard times. As a result, the city economy has shrunk.

Metro National has felt some of this depression, which has forced it to cut back on its budget somewhat. Hugg has to present a pretty good case to get additional funds. He says that the company has been adding new property which he and his staff will have to maintain. He needs more labor but doesn't expect to get it.

"We have to compete with outside companies, yet we spend more than they do," he says. But Hugg does find a benefit from the lean times. After the labor cuts were made, he found his department ran more efficiently.

Meeting personal goals

Hugg lists a number of important future personal goals. They include obtaining a nursery license in order to buy plant materials wholesale; taking advantage of volume and early order discount programs when buying chemicals and fertilizers; setting up an in-house mechanic shop for daily maintenance and repairs of equipment; doing all of Metro National's new and renovation landscape construction in-house at cost; doing a majority of landscape design work to save the company landscape architect fees; and setting up in-house interiorscape maintenance and construction.

Hugg and Metro Landscape re-

A special trim crew is needed to trim shrubbery of four apartment complexes on four corners of two streets.

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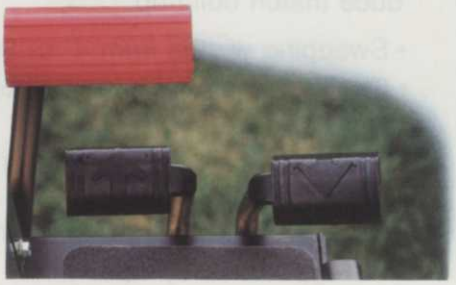

Two pedal speed and direction control helps reduce fatigue. Provides steadier, less jerky speed control on rough ground compared to heel and toe, single pedal units.

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sumed interiorscape maintenance in January after having subcontracted to an outside firm for two years. He hopes to take the Interior Horticulture Certification exam soon. Technically, he says, he is not eligible to take the exam. A certain amount of time doing the interior work is required before the exam can be taken. After he is back into it for a while, though, he says he will take the test.

Hugg lists his most important accomplishment in the past year as "redesigning plans for Spring Shadows Pines, a nursing home, that a landscape architect had drawn but the owner of our company was unhappy with. I added in a lot of azaleas and annuals for color. I also directed the landscape construction for the four-acre facility."

Working with a crowd

"Metro National has nine different property managers who I have to cater to," Hugg says. "I also maintain the homes of 12 executives of the company who all have their personal tastes. Everyone, including myself, has their own ideas and desires, but many times all is overridden by the owner of the company, who has the final word."

Hugg found a benefit from the lean times: after labor cuts were made, his department ran more efficiently.

Fortunately, Hugg says he has run into few problems with his supervisors. "The good thing is, all of the property managers work for the same company," he adds.

Looking ahead

In the next five years, Hugg wants to put all inventories and maintenance schedules on computer. He only recently has had a computer put into his office, but plans on computerizing inventories and schedules this year.

During the past year, Hugg has been working on a feasibility study of costs to build greenhouses and hire a grower for growing annuals and interiorscape color programs in-house. "But I haven't convinced myself that it's worth it." The study was borne out of frustration from not having the plants there when they were needed, he says. It might be just as cheap to continue buying from outside growers anyway, he adds. Even if Hugg finds it cost-effective for the company to have its own greenhouse, he would still have to convince company management.

If financially possible, he would also like to open a nursery re-wholesale distribution center and a retail garden center on Metro National land. Last year Metro National seriously thought about building a golf course on some of its land, Hugg says. "The owner decided to table the idea, primarily because of the economy," he notes. "If the economy improves and the idea is reborn again, I hope to contribute to the design and outline and implement a maintenance program."

And almost certainly, bring in more awards for himself and the company. **LM**

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Scotts ProTurf

Dick, ProTurf already has a 15-0-30 High K fertilizer for fairways. Why did you feel you needed something for greens? "On greens, you want a fertilizer with a very small particle size. Much smaller than our fairway product designed for the big rotary spreaders."

Why does particle size make a difference? "The smaller particles disperse evenly from the spreader, filter down into the turf, and disappear when you water. There's less chance they'll affect a putt or stick to shoes and get tracked around."

That sounds good for the golfers. "Superintendents will like it, too. In addition to being small, each particle is homogeneous. So, even at half the regular application rate, there's no chance of getting the kind of speckling you might see if you used a coarse blend. And more particles per square inch produces a more desirable, uniform greening response."

Now tell me why High K will be good for my greens. "High potassium levels have been found to enhance turf performance, particularly under stress conditions—improving drought hardiness, resistance to disease, and wear tolerance. There's also evidence that high potassium reduces winter kill in bermudagrass."

Why is there so little nitrogen? "To prevent over-stimulating top growth. For example, High K Greens can be used at double rates to build potassium levels in sand greens and you'd still be applying only 1 pound of N per 1,000 square feet. Or you can use it at regular rates on any greens that are on a low nitrogen diet. It can also be used at any time of the year."

Anything else we should know about ProTurf High K? "If you like what it does for fairways, you'll love what it does for greens."

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"We developed this new version of 15-0-30 High K fertilizer especially for greens. And golfers."

Dick Westfall, Scotts Research project leader (Fertilizer R&D), talks about new **High K Greens Fertilizer.**

Trees are a major consideration when lighting a landscape.

AFRAID OF THE DARK?

Don't be. Nightlighting is being used for a whole slew of applications; security is only one segment of a colorful, growing part of landscaping.

by Jeff Sobul, assistant editor

Thirty years ago, nightlighting was being used soley to keep from getting mugged in the parking lot or to keep little Johnny from being attacked by the Boogie Man while he was trying to fall asleep.

Well, little Johnny grew up. And so did nightlighting; to the point that it's an entirely new dimension for landscapers with a little imagination.

William J. Locklin, a licensed electrical contractor and electrical engineer, literally created the industry when "a hobby got out of control," he says. He formed his company, Loran, Inc., in 1960, and began to market the concept of low-voltage (12-volt) lighting.

Cost was not a factor in creating the low-voltage market, Locklin says. Indeed, electricity prices were negligible. He began because there was an empty niche in the market. "There was nothing to compete with it (12-volt lighting)," he says. "There still isn't."

Convincing everyone of this was not so easy. Locklin says that he used to go to collegues and say "I have 12-volt lighting," and they'd give him a "That's-nice—what-the-hell-is-that?" look. "But in the last 10 years the industry's come into its own," he observes.

Locklin cites a number of reasons for the industry's slow start but recent rapid growth into an approximately $75 million annual business.

In the post-World War II era, thou-

'We're afraid of what's in the dark. It's kind of a nice feeling to have that light.'

—William J. Locklin
Loran, Inc.

sands of small homes were built to "get the soldiers out of the trenches and into homes," Locklin says. Little emphasis was put on landscaping. The home was merely a place to live, nothing else.

But through the 1950s, as Americans became more affluent, homeowners began taking a little more interest in their homes. "People were placing a much greater emphasis on their homes," Locklin says. The lawn care and landscaping industries blossomed and flourished, and as the idea became more widely accepted, so too did landscape lighting.

Other factors were involved as well. Before 1960, Locklin says, few homes were built with outdoor electrical outlets. When these became part of the building plan, the possibility for outdoor lighting did also.

But even more importantly, "we're afraid of what's in the dark," Locklin notes. "It's kind of a nice feeling to have that light."

Lighting takes root

Once landscape lighting became accepted, its growth was rapid. From simple beginnings have come major advancements in technology and landscape concepts.

In the beginning, single light sources—sometimes nothing more than a tractor headlamp—were used. Now, says Locklin, the industry has developed quartz halogen multi-mirror light sources with controls for dimming and remote switching.

While sophisticated equipment is good, it is not always best. Simple equipment will also do just as well depending on the landscape design circumstances (see chart). Much more important than the equipment itelf is *how* the equipment will be used.

Take a good look

The landscaper must take into consideration a number of factors when planning the installation.

Space relationship is a major consideration in the design planning. Walls, hedges, fences, buildings and trees have to be taken into consideration, as well as what lighted areas will be used for. Lighting levels for lighted areas should be in scale with the areas and their uses. Unless a homeowner wants to use it for recreational purposes, a garden shouldn't be floodlit. Proper lighting can create a stunning visual effect.

Other factors like contour and perspective must also be considered carefully. And other possibilities can include specifically highlighting one subject, such as a statue in a garden.

Personal touch

The light must invariably fit the sub-

Major advances in technology and lighting concepts allow for creativity in lighting designs.

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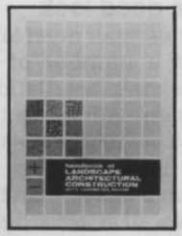

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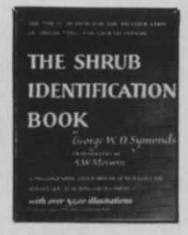

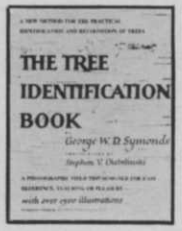

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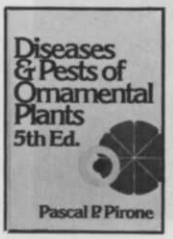

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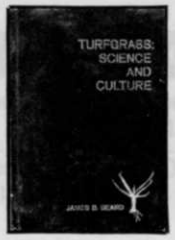

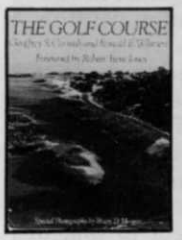

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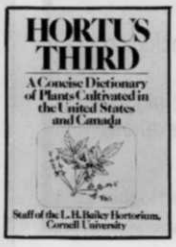
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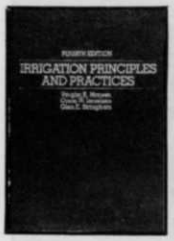

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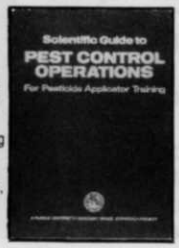

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Plant materials and lamps criteria

EVERGREEN

Foliage density	Viewer distance	Recommended lamps	Remarks
OPEN	CLOSE	Low wattage I/F mercury vapor lamps	When flowers are not important
		PAR 38 and compact fluorescent lamps	When flower and branch structures are nice
		Blue-white lamps	When branches and leaves are important
		Combination of incandescent, fluorescent, and mercury vapor lamps	When foliage, trunk and flowers are important; switch based on season
MEDIUM	MID-DISTANCE	Same approach as when CLOSE, but increase wattage	Check plant material textures
		Quartz and compact fluorescent lamps	Same
		Same approach; increase wattage and number	Check plant material textures, color of flower
		Use blue fluorescent lamps	For greenery
		Use Chroma 50	For greenery and background
COMPACT	FAR	Mercury vapor PAR 38	Only for far and very dark greens

DECIDUOUS

Foliage density	Viewer distance	Recommended lamps	Remarks
OPEN	CLOSE	Incandescent PAR 38 in combination with blue-white lamps	For structure and flowers, for greenery
		Blue fluorescent	For fences and background
		Same approach, increase watts	Check colors and textures
MEDIUM	MID-DISTANCE	Combination of fluorescent with incandescent lamps	Small and medium size gardens; check colors
		Mercury vapor I/F color corrected lamps	For trees in background
		Combination of mercury vapor and incandescent	Have two circuits for seasons
		Chroma 50 and blue-white incandescent	For backgrounds including flowers
COMPACT	FAR	Use high-watt quartz lamps	For large areas and big trees; check colors and textures

Reprinted with permission from *Architectural Lighting*, November, 1986, by Enrique Noguera.

ject. For something like an open-branching tree, a 100-watt household bulb can be used as a floodlight, illuminating the leaves to create a surrounding effect.

Seasonal changes can be beautifully highlighted, especially fall colors and the stark beauty of naked trees and snow.

Garden steps or paths are also good subjects for lighting, mainly from a safety standpoint. But the underlying factor, which Locklin stresses when he works with a contractor or a homeowner, is to do the job the way the customer wants it done. "I like anything where I can work with the owner because it's fun to transfer his wishes, dreams into reality," Locklin says.

He believes the landscape should be a personal reflection of the owner rather than the landscaper.

As a result, Locklin makes it a re-

Speaking the language

The landscape lighting industry has only become an influence on landscaping in the last 10 years. Here is a short dictionary of nightlighting terms, with a little help from William Locklin and Loran, Inc.

Lighting has three basic techniques:

Downlighting: a natural and efficient manner of lighting, much like sunlight or moonlight. Sources are directed down through trees or plants and are hidden.

Uplighting: The fixture is placed on the ground and directed up through plant material.

Backlighting: a subtle form of lighting. Backgrounds such as walls and fences are softly illuminated. Plants and trees are silhouetted against the lighted backdrop.

From these basic techniques a number of different combinations can be made to serve various functions. They include:

Safety lighting: one of the most common functions of outdoor lighting. Lights can illuminate walkways, steps and unexpected hazards or dark areas. Downlighting is the most common method used for this.

Security lighting: an offshoot of safety lighting. It can be used effectively as a defense against intruders. With proper timing controls, such as photoelectric cells, safety lighting can give the impression that someone is home.

Mirror lighting: effective for use with dark-bottomed pools or ponds. Lighted areas on the opposite side from the viewer can create a similar effect to that of moonlight reflecting off the surface.

Highlighting: creating a focal point by lighting it a bit more intensely than other areas, drawing visual interest.

Skeleton lighting: for use especially during fall and winter, uplighting or backlighting bare tree skeletons can create a dramatic effect.

Cross lighting: two light sources opposite each other focused on one object cross at the object to create a visual focal point.

Underwater lighting: (for landscape lighting only) colored lenses and a current can create a stunning visual effect in clear water of ponds or non-swimming pools.

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OBERLIN, OHIO, GETS IN SYNC

When Edward Thompson first came to Oberlin (Ohio) College as landscape manager, 108 different types of lights were being used.

Many of the lights used 400-watt mercury vapor bulbs, sometimes on double-headed fixtures. In effect, they created black holes, with pedestrians going from incredibly bright areas to virtual darkness. Human eyes couldn't adjust fast enough to the change.

On top of that, lights were burning out and pieces were breaking. Replacements weren't always available, and Thompson often had to dig up building plans just to figure out what type of lights he was dealing with. The town of Oberlin had the same problem.

A solution was definitely needed as was cooperation between the town and college.

Standardizing

It took six months for Thompson to convince the city government that aesthetic light fixtures could be both functional and effective. "The real pain and agony was getting things standardized," he comments.

But eventually, standards were agreed upon. That was three-and-a-half years ago.

In that time, the entire plan for fixture and bulb replacement has been about 25 percent completed. The first major overhaul came in the town square, which was the main subject of the original proposal for light renovation.

Tappan Square's 13 acres are surrounded on three sides by the college, the fourth by the town. A number of events and festivals held in the square require versatile lighting.

The town needed the capability to turn off part of the system, while leaving some of the lights on. This was especially true for events like Ohio Ballet performances, which didn't require lights in the performance area but elsewhere during performances.

'Beyond lights'

What resulted was a system that "went beyond lights themselves," says Thompson. Control panels were necessary to keep the lights operating up to specifications, and extensive work was done underground laying the system. For the square alone, the system cost about $124,000.

Halogen RSL-3 high-pressure sodium lights have replaced the mercury bulbs. The fixtures can handle bulb wattages of 35, 70 and 150. The 150-watt bulbs give off 21,000 lumens compared with 24,000 from the 400-watt mercury lights. Wattage savings far outweighs losing 3,000 lumens.

Work has been completed on a number of main streets in the city and on campus. "It's kind of fun in the areas it has developed to see the same fixtures on campus and then in the town square," Thompson comments.

He projects that, based on previous progress, if things go well, complete renovation of the light fixtures should be finished within 10 years. *—Jeff Sobul*

---

quirement to get to know the homeowner. Part of that acquainting process includes dinner with the owner and contractor or landscape architect. Locklin feels this is the best way to get knowledge of a family's living habits. It is essential.

It is also successful. Locklin's success has created an industry made up of many companies, new and established.

A notable entry is Toro. In 1985, the company bought LunaLite, an established company that dealt in outdoor landscape lighting. Toro expanded the line, marketing separate systems for contractors (a more complex one) and homeowners.

"We saw it as an opportunity for Toro to enter into a new, up-and-coming market," says Bill Barkalow, marketing director for the low-voltage lighting division. Though he could not quote specific figures, Barkalow said Toro's growth in the market has been rapid.

One of Europe's leading sources of landscape lighting, Bega, joined forces with Forms&Surfaces to create Bega/FS. The joint venture has recently introduced a line of lighting equipment and accessories into the U.S. market.

And with continued affluence in America, the outdoor lighting industry should diversify and continue to grow. **LM**

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What aquatics experts have to say about new Sonar.

Terry Westergard

Owner
South Shore Fish Camp,
Lake Orange, Florida

"Sonar controls weeds longer than mechanical harvesting and I've seen no adverse effects from it. And the fishermen like the fact that they are able to fish in places where they haven't been able to get into for a number of years. They enjoy it because it reminds them of what the lake was like before the hydrilla.

"Fishermen want to go out without worrying about burning up their engines, and be able to throw in a lure and catch a fish. This is what we had 10 or 15 years ago."

Mike Mahler

Operations Coordinator
Polk County Environmental Services
(Florida)

"With Sonar, we were able to put the lakes back to the condition they were in before hydrilla came in. We've had some lakes that were virtually 100% surfaced out in hydrilla before we used Sonar. Now, it's rare to see hydrilla in those places.

"Sonar can be applied in the early spring or late winter, when our crews normally are idle. It's helped us catch the problem and knock it down before it becomes a problem.

"Most of our treatments ended up with more than 12 months of control. Contact herbicides give us about three months of control.

"On a per-acre, per-year-of-control basis, Sonar is cheaper than any other material."

Will Davis

Executive Director
Lake County
Water Authority (Florida)

"If I had to say there was one big advantage to Sonar, it's very selective on the plants it controls.

"Hydrilla is our main problem, and Sonar is our primary chemical for treating it. With Sonar, we got 99% control on Lake Yale without retreating...and we're seeing a good influx of native plants to take the place of the hydrilla.

"We're getting much longer term control, which means we're putting a lot less chemical in the water. Every year that you don't get a regrowth makes a big difference in costs over the long run. There was no cost-effective method of getting a lake clean until Sonar came along. I don't know of a chemical on the market that can even come close to it."

Paul Myers

President
Applied Aquatics,
Eagle Lake, Florida

"I was one of the fortunate few who was able to work with the product during its development stages. I was extremely excited about it because new aquatic herbicides are few and far between.

"With Sonar, we've gotten annual control with a single application in lakes and ponds. With contact herbicides, you can figure you're going to have to treat two to three times a year.

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Mower manufacturing has been influenced by both social changes and industry trends.

MOWER TRENDS

Technology has influenced mower manufacturing. But perhaps bigger influences are the trends in golf course and landscape management.

by Heide Aungst, associate editor

With word from the University of Cincinnati that its "robot" lawn mower may soon have a manufacturer, other companies are being forced to constantly keep up with innovative developments in the mower industry. But trends outside of manufacturing—but within the green industry—also influence mower production.

"Customers, both golf course and lawn care, are becoming increasingly cost-conscious," notes Jeff Mack, Lesco's equipment products manager. "They will not, however, sacrifice quality to attain this goal. We also see a trend in the customer becoming more self-sufficient in the maintenance of his equipment, again with an eye toward controlling costs."

Many manufacturers cited cost-consciousness as influencing purchases.

"End users have begun to understand that there are false savings buying cheap products," says Lee Bouldin, marketing services manager for Gravely International. "It is much more economical in the long run to buy quality first."

"Industrywide, the very intense price competition will continue," notes Charles Berry, national sales manager for Ariens.

Berry names the development of front cutting mowers, high horsepower and wider cuts as influential changes in mower manufacturing. "We are emphasizing better bagging, quieter products, longer warranties and high power," he says.

"Time and cost efficiency are more in demand with a greater emphasis on quality of cut," says Timothy Phelan, manager of merchandising for Wheel Horse Products. "They want the same individual to be able to mow more grass in less time without sacrificing any quality in the cut."

Howard Day, vice president of sales for Yazoo, says rotaries will become even more popular as manufacturers develop easier handling equipment.

Jack Steinhour, advertising manager for Woods Division of Hesston, agrees that rotaries are becoming a viable alternative because maintenance costs are lower.

"There are greater demands by all users of mowing equipment for less frequent maintenance intervals, automatic clipping collection, best quality of cut possible, overall noise reduction and more attention to operator safety," says Clarke Staples, turf manager for Cushman.

Manufacturing's future

John Kinkead, sales manager for National Mower, says the formula is simple: "more production and more efficiency in production."

As for trends in manufacturing, Phelan says, "I believe there is a trend to more hydrostatic drives in the lawn and garden tractor area, while zero turning radius continues to grow in the commercial mowing machine marketplace."

"There is an increasing use of and demand for grass-catching equipment," adds Rick Bressie, director of communications for the Grasshopper Co.

Robert Martin, president of Exmark Manufacturing, says manufacturers will develop even more specialized equipment in the future.

Mower safety is a big issue in manufacturing says Pat Scholl, communications manager for the Alamo Group.

"Most of the trends in golf course/landscape management that have affected mower manufacturers have to do with the relationship between the machine and its operator, like operator convenience, operator safety, and reducing operator time," says Chris Covert, director of administration and international operations for Simplicity Manufacturing.

"The growth of landscape contracting and maintenance business has led to the development of more versatile equipment capable of performing more than one function," says Jim Taylor of Heckendorn.

"The trend toward lower mowing heights on golf course fairways and greens is leading to more sophisticated mowers, more intensive turf maintenance," says James Byrnes, advertising manager for Jacobsen. Byrnes adds that improvements such as hydraulics for traction, implement drives and durable, economical diesel engines are becoming increasingly popular.

Dick Lehman, executive vice president for Ransomes, cites the desire of golf course superintendents and landscape managers to have lightweight mowing equipment as an influencing factor in manufacturing.

"There's been a growth in the fine turf industry," says Rich Jenks, adver-

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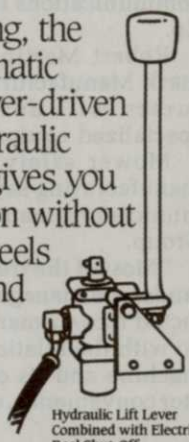

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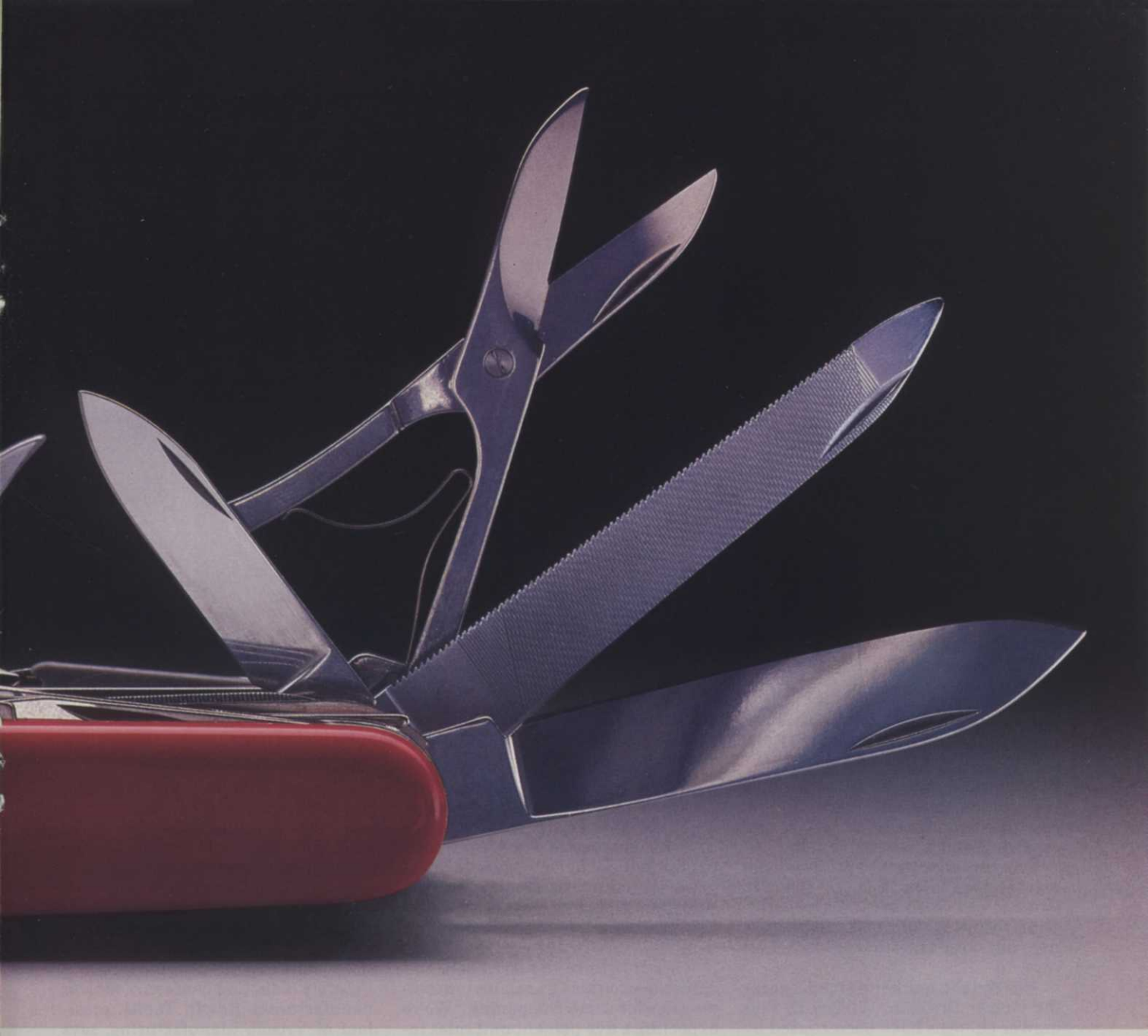

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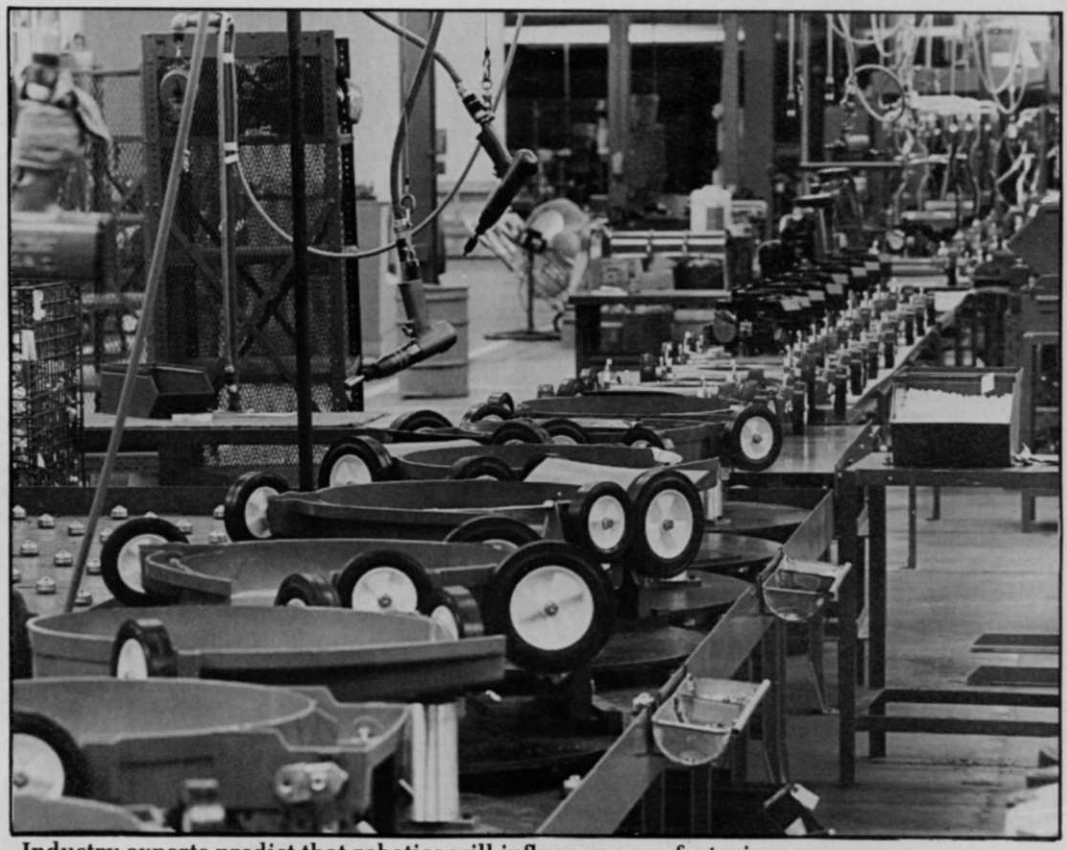
tising supervisor for Deere and Co. "There's better maintained turf at golf courses, parks, playgrounds and athletic facilities. With that, I see an opportunity for John Deere to move in."



Industry experts predict that robotics will influence manufacturing more than actual mowing.

Quality care

"We've seen our walk-behind mowers become popular with golf courses concerned with quality. They've gone back to walking greensmowers. It gives a superior cut, but they make a time sacrifice. Just this year we've seen interest in walk-behind mowing of tees also," says Mike Burch, advertising agent for Bunton.

G.C. Mitchell, marketing manager for Brouwer Turf Equipment, lists five popular mower features: low compaction, low fuel consumption, ease of operation, ease of service and repairing, and a reasonable price.

"As turf conditions vary from one marketplace to another, we strive to listen to our customers' needs worldwide, resulting in special design, engineering, and simplicity," Mitchell says.

Jim Wright, marketing manager for the Grazer Division, Willsey-D, says mower changes have been caused by an increased dependency on commercial operators. "More residential areas are also becoming more dependent on commercial operators," he explains.

Mike Schaefer, vice president of F.D. Kees Manufacturing Co., feels the operator is looking for "quality performance in equipment which requires less down time."

Robert Martin, president of Exmark Manufacturing, says the landscape manager wants simply "more specialized equipment."

"Landscape management is growing rapidly and is going to be a very strong market in the future," says Kevin McGrath, president of Locke Manufacturing. "The golf course market is fairly stable."

"The commercial landscape market is increasing at a very, very fast pace compared to the rest of the power equipment industry," agrees Betty Schwarz, customer service manager for Scag Power Equipment.

"The number of lawn care companies which have begun to mow grass has influenced manufacturing," says Don Weakley, Snapper's senior vice president for corporate development.

This growth in the lawn care and landscape markets translates into better sales for some companies. "We're expecting a five percent unit sales increase at least in 1987," says Mike Tomita, marketing coordinator for Kubota Tractor Corp.

Society's influence

Changing patterns in society also have affected mower manufacturing. "The commercial business continues expanding as the population ages, people move from suburbs into apartments and condominiums, and ever-increasing park and green belt areas are being mowed," explains Dean Ziegenbein, product manager for Gilson Bros. "Users of mowing equipment are looking for faster cutting ability, less down time for maintenance, and lower cost for new replacement mowers."

"The fact that there are people out there trying to make a living by cutting grass puts pressure on manufacturers to produce equipment which is durable and reliable," says Dave Welfelt, sales manager for Excel.

"The high initial cost of developed land, and the cost of maintaining green areas around new projects is creating a trend away from large turf areas and favors the use of a larger number of small landscaped areas," says Bob Walker, president of Walker Manufacturing.

Safety is another concern of mower manufacturers. Edwin Toolis, president of Vrismo Manufacturing, says the safety features and versatility of flail mowers make them better than rotaries.

"An increasing number of people seek more recreation facilities, the factor of operating safely becomes mandatory," says Howard Wilbrandt, director of marketing for the Mathews Company. "We believe flail mowing will be a requirement wherever people and mowing share the same turf simultaneously."

Bomford & Evershed marketing director E.A. McLaren says the key is to manufacure a flail mower which will reduce the frequency of cut.

One final trend worth noting: the use of rotary mowers for golf course greens. "Before, there were never rotaries on the course," notes manufacturer Howard Price. "But we're selling a number of rotaries with 72- to 180-inch cuts for use on roughs."

LM

Photograph Courtesy NASA

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6-2725

POST EMERGENCE WEED CONTROL GUIDE

The dandelion is a winter broadleaf weed which can be treated with 2,4-D.

AFTER THE FACT

If your pre-emergence weed control didn't work, here's a guide to the post-emergence choices.

WARM-SEASON

by Euel Coats,
Mississippi State University

Post-emergence herbicides are applied after weeds have emerged. Post-emergence herbicides act either by contact or after absorption and translocation (systemic).

Contact herbicides act rapidly, while translocated herbicides usually require several days for their phytotoxic action to be observed. Translocated types usually kill the entire plant, whereas contact herbicides kill only the contacted part of the foliage.

Best results will usually be obtained with post-emergence herbicides if plants are young and actively growing, and the air temperature is above 70 degrees Fahrenheit. Foliar applied herbicides are less effective if the soil is dry.

Consult the herbicide label for the optimum growth stage and environmental conditions needed to obtain the best results with a given herbicide. Surfactants are frequently recommended for use with post-emergence herbicides. For consistent results, use non-ionic agricultural surfactants sold specifically for use with herbicides.

Warm-season turfgrasses vary in their susceptibility to post-emergence herbicides. However, it is possible in most cases to discuss bermudagrasses and zoysiagrasses as a group and centipedegrass and St. Augustinegrass as a second group similarily in herbicide tolerance.

Many herbicides that can be used on bermudagrasses and zoysiagrasses cannot be used on either centipedegrass or St. Augustinegrass. Weed problems in warm season turfgrasses occur both in the growing and dormant seasons.

Winter grass weeds

Annual bluegrass is by far the most severe grassy weed infesting southern turf areas during the late warm growing season, through the dormant period, and into the early part of the next growing season. This weed occurs in all turf environments, especially in moist soils. Aside from decreasing the aesthetic value of turf, the primary objection of annual bluegrass in southern turf is the onset of other weed problems associated with the rapid die-back of annual bluegrass in late spring.

Bermudagrass coverage of bare spots is usually slow following fade-out of annual bluegrass, leaving sections of the soil surface exposed. Weeds tend to germinate in bare areas.

A particular problem is goosegrass, which is usually difficult and expensive to control.

Pronamide application made as early as November or as late as April will give annual bluegrass control in dormant turfs. Ideally, treatment should be made prior to seed production to reduce next year's seed source. Application prior to seed production is also early enough for effective annual bluegrass control while not interfering with the transition of bermudagrass. The earlier a dense bermudagrass canopy develops, the more competitive the turf will be with summer weeds.

Another approach employed on many golf courses is to use a post-emergence application of a non-selective herbicide such as paraquat or cacodylic acid prior to the breaking of bermudagrass dormancy. This usually does an excellent job on annual

bluegrass, as well as any annual broadleaf weeds present.

However, injury is often encountered if application is delayed until the bermudagrass begins breaking dormancy. The degree of injury is dependent on the amount of green foliage present at the time of application.

Winter broadleaf weeds

Important broadleaf weed species include: common chickweed, henbit, clovers, mouseear chickweed, lawn burweed (spurweed), dandelion, wild onion, wild garlic, plantains, speedwells and others.

Henbit, chickweed and clovers dictate that something other than 2,4-D be used for post-emergence broadleaf weed control.

In dormant bermudagrass and zoysiagrass, Banvel or a two- or three-way herbicide combination containing Banvel are usually used.

The phenoxy herbicides are safe on completely dormant turfs. Actively growing turfs vary considerably in their tolerance to phenoxy-type materials.

St. Augustinegrass will usually tolerate 0.5 lb/A of 2,4-D with only minimal injury if the air temperature is below 80 degrees Fahrenheit. This may not seem important when using phenoxy on dormant warm-season turfs, but invariably application is made at various stages during spring transition.

Turfgrasses are more susceptible to phenoxy injury during this transition period.

The combination of mecoprop plus chlorflurenol is often used by homeowners, especially in St. Augustinegrass lawns. Wild garlic is a major perennial weed problem in many warm season turfs during the cool growing season.

A fall application followed by a spring application of 2,4-D for three or more years has been used for wild garlic control with varying degrees of success. Image, a new herbicide recently labeled (1987) for use in turf has shown potential for more effective control of wild garlic than 2,4-D, and should contribute significantly to more effective management of wild garlic.

Summer grass and sedge weeds

Crabgrass and dallisgrass invade more turf acreage in the southern United States than any other grass. Post-emergence control of these two weeds, especially crabgrass, can be accomplished in centipedegrass with Poast.

In St. Augustinegrass, an application of Asulox will give reasonably good control of crabgrass and certain other annual grassy weeds. In bermudagrass and zoysiagrass, control can be achieved with MSMA, DSMA or CMA. In fact, dallisgrass control in bermudagrass and zoysiagrass relies heavily on these herbicides.

Henbit, chickweed and clover (pictured here) dictate that something other than 2,4-D be used for post-emergence broadleaf weed control.

MSMA plus metribuzin plus surfactant gives good post-emergence control of goosegrass. Two applications of MSMA (2 lbs/A) plus metribuzin (1/18 lb/A) plus 1 quart of non-ionic surfactant per 100 gallon tank mix applied seven days apart will generally give excellent control of even mature goosegrass.

Remember, the methane arsonates can be used only on bermudagrass and zoysiagrass. Other grass weed problems in southern turfs include sandbur, bahiagrass, crowfootgrass and torpedograss.

Sandbur and bahiagrass can be controlled with methane arsonates, although several applications may be required.

No means of selective control of torpedograss in any southern turf species has been developed.

Both annual and perennial sedges are problems in the southern United States. Purple nutsedge and, to a lesser extent, yellow nutsedge, are the most severe problems. Yellow nutsedge can be controlled with Basagran. Roundup will control nutsedge when used as a site preparation aid.

Image, in addition to controlling wild garlic, will also control purple and yellow nutsedge, as well as many annual sedges.

Although broadleaf weeds are a problem throughout the southern United States in turf, no species appears to reach the level of infestation equivalent to that of the summer grasses.

Among the more important summer broadleaf weeds are prostrate spurge, prostrate knotweed, yellow woodsorrel, Virginia buttonweed and Florida betony.

Summer broadleaf weeds

As a group, they are rather difficult to control. Multiple applications of a two- or three- way hormone mixture are necessary for effective control and repeat treatments are often needed.

From our limited experience with some members of the group, we generally observe that the use of a good agricultural grade surfactant is warranted when applying a hormone herbicide.

A mixture of 2,4-D plus dichlorprop has given equal or better post-emergence control of Virginia buttonweed than other hormone herbicide mixtures in our research trials in 1984, 1985 and 1986.

We have observed that the level of Virginia buttonweed control can be increased an additional 15 to 20 percent if a pre-emergence herbicide, such as oxadiazon or Princep, is applied at the same time a post-emergence application is made. The increase attributable to the pre-emergence herbicide appears to be due to reduced regrowth or reinfestation of Virginia buttonweed from seed.

Cool season turfgrass weeds

Weed control technology for cool season turfgrass overseeded into warm season turfs (bermudagrass) is somewhat limited. The small acreage has not justified the expenditure of re-

sources by university researchers. Also, chemical companies have been reluctant to label their herbicides for this use due primarily to the limited acreages and high financial risk involved.

Nevertheless, fair to good control of weeds in this turf situation can usually be achieved.

Annual bluegrass control in overseeded golf greens may be accomplished with Prograss. Prograss will control annual bluegrass when applied either pre-emergence or post-emergence. However, Prograss is recommended only for post-emergence control in overseeded golf greens, and further only to greens overseeded to a monostand of ryegrass or blend of ryegrass. Prograss may also be used to control annual bluegrass in overseeded turfs.

Safety to perennial ryegrass dictates that it be used as a post-emergent. One or two applications are needed, and the first application should be made 30 days after overseeding (bermudagrass dormant). The follow-up application should not be made after the date specified on the label. It appears that the safe use of Prograss is limited to the northern part of the bermudagrass belt.

Unless the bermudagrass is completely dormant at application, significant delays in growth from dormancy to actively growing bermudagrass can occur.

Disadvantages of Prograss may involve both the bermudagrass and the ryegrass. If bermudagrass is not dormant when the initial application is made, delays in transition are sometimes observed the following spring.

If the second application is made too late, significant delays in spring transition are also observed. Additionally, Prograss can be used only on ryegrass.

Consequently, overseeding mixtures containing creeping bentgrass, red fescue or rough bluegrass cannot be planted when Prograss is used for annual bluegrass control.

Common chickweed tolerant to 2,4-D, necessitates the use of other materials.

Broadleaf weed problems in overseeded turf are quite variable. A number of the common winter annual broadleaf weeds found throughout the southern United States during the dormant season may or may not be a problem in overseeded turf.

Henbit, common chickweed, clovers, spurweed and mustards are among the more important of this group. Competition from the overseeded turf would seem to hold infestations down significantly. When a herbicide is needed, henbit, common chickweed and (or) clovers usually dictate the herbicide(s) that will be used.

These weeds are fairly tolerant to 2,4-D, necessitating the use of other "phenoxy type" materials. In general, Banvel or a phenoxy-Banvel mixture are recommended for broadleaf control where these weeds are present.

Banvel or Banvel mixtures appear to be the most widely used for control of these weeds. Numerous two-way mixtures of Banvel and 2,4-D formulations exist on the market. These and the three-way mixtures Trex-San or Trimec are probably used more than Banvel alone. Weed-B-Gon for Southern Grasses, which is a mixture of mecoprop and chlorflurenol, is also used to some extent by homeowners. In overseeded greens where lawn burweed (spurweed) is the problem, Buctril or Brominal is a very effective and safe herbicide to use. **LM**

COOL-SEASON

by John R. Hall III, Virginia Polytechnic University

Post-emergence herbicides most commonly include materials utilized to selectively control broadleaf weeds, annual grassy weeds and sedge-type plants after they have germinated or emerged. However, this category can also include non-selective materials that are used in renovation for total plant kill prior to seeding.

The most commonly utilized cool-season turfgrass broadleaf herbicides include materials such as 2,4-D, 2,4-DP (dichloroprop), mecoprop (MCPP), dicamba and bromoxynil. Annual grassy post-emergence weed control in cool-season turfgrass is achieved with materials such as DSMA (disodium methane arsonate), MSMA (monosodium methane arsonate), MAMA (monoammonium methane arsonate), CMA (calcium methane arsonate) and fenoxaprop-ethyl.

The arsonates have also been shown to be moderately effective for control of yellow nutsedge in cool-season turfgrasses. However, bentazon has provided more effective long term control with less injury to the desirable cool-season turfgrass.

Glyphosate has proven to be the most effective renovation herbicide where total kill of the existing stand of grasses and weeds is desirable. Soil

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Janice Piechowski
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sterilants are certainly considered post-emergence herbicides. However, safety concerns associated with their use in the homeowner environment have reduced their popularity.

Many factors affect herbicide efficacy. Some of the more important factors that should be given consideration prior to use include the following:

1. Identification of the weed and desirable turfgrass. Positive identification of the weed to be controlled is essential to prescribing the most effective herbicide.

In addition, it is important to know which turfgrass the weed is in since different turfgrasses have varying susceptibilty to applied herbicides.

2. Growth stage of the weed. Most effective post-emergence weed control is achieved on young, actively growing weeds. If weeds are nearing the end of their life cycle and not actively growing, they will not be effectively controlled.

Examples of improper timing would include attempts to control winter annuals such as common chickweed, henbit, German moss (Knawel) and sowthistle in June when they have already produced seed for the upcomimg fall germination and are near the end of their annual life cycle.

3. Growth rate of the weed. The more metabolically active a weed is, the more effectively it will be controlled by herbicides. Therefore, any factor such as sunlight, moisture or good nutrition that speeds up growth rate will generally increase herbicide efficacy.

If weeds to be controlled are under heat or drought stress they will not be metabolically active and will be less affected by applied herbicides.

On the other hand, if the desirable cool-season turfgrass is somewhat sensitive to the herbicide being applied and is under drought or heat stress, it is likely it will suffer greater damage from the application.

3. Morphology of the weed. If the weed to be controlled has a thick, waxy cuticle or a leaf shape which is not conducive to good herbicide spray contact, decisions about which formulation of the herbicide to utilize can be critical. Weeds like wild onion and wild garlic are better controlled with liquid sprays than granular sprays.

Additionally, waxy cuticles are better penetrated by low-volatile esters than amine formulations. Concern about the increased probability of ester volatilization in the landscape has however reduced ester popularity.

4. Air and soil temperature. Maximum metabolic activity in most weeds occurs between 55 and 80 degrees Fahrenheit and therefore herbicide spraying should be planned for times of the year when temperatures are in this range. Temperatures outside this range will reduce metabolic activity and therefore herbicide effectiveness.

5. Rainfall probability and foliage wetness. Liquid herbicides are most effectively absorbed when applied to dry leaf surfaces. Water dilution rates for herbicides have been recommended assuming the foliage is dry at the time of application.

Wet foliage will reduce liquid herbicide effectiveness at normal water spray rates. Granular herbicides are generally more effectively absorbed when applied to wet foliage.

Most foliar absorbed post-emergence herbicides require four to six hours of foliar absorption to be effective. Rainfall prior to this time will significantly reduce herbicide effectiveness.

Anything that reduces metabolic activity of the weed during the foliar absorption period will increase the time required to achieve adequate herbicide absorption. Other factors such as physiological detoxification of applied herbicides, organic matter binding, soil binding, leaching,

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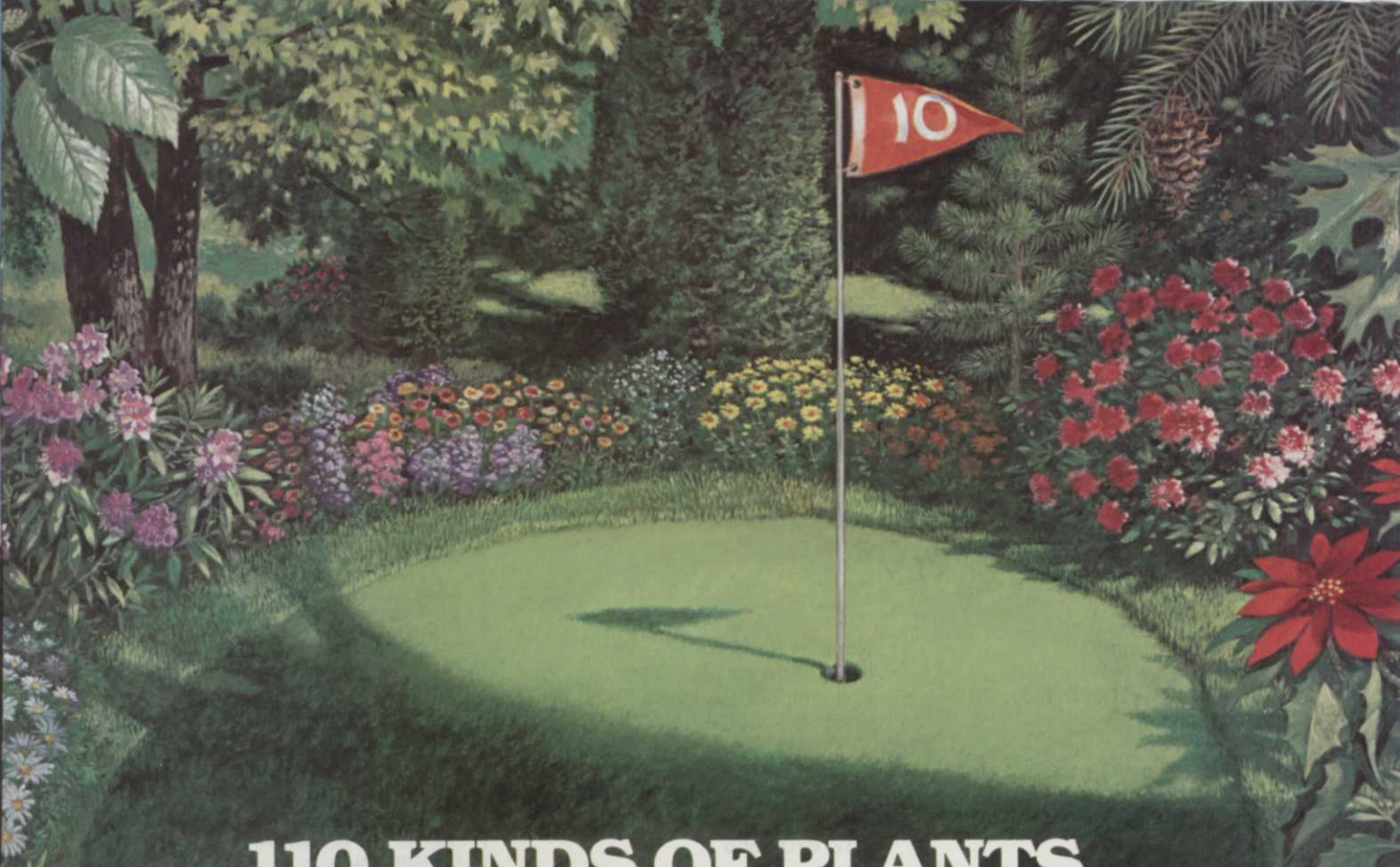

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photo decomposition, water pH, mixture incompatibility and rate of the herbicide applied can all have an effect upon the efficacy of the applied herbicide.

Combinations of commonly used broadleaf post-emergence herbicides are generally more effective in providing broad spectrum weed control than single herbicide mixtures.

Repeat applications of some herbicides will be necessary for 100 percent control. Use of post-emergence arsenicals for annual grass control actually necessitates re-application two or three times at 10- to 14-day intervals.

Repeat applications of the broadleaf herbicides should be spaced at least 30 to 45 days apart to minimize injury to the turfgrass.

In all spraying situations, spot spraying minimizes cost, environmental exposure and general stress on the desirable species while maximizing herbicide efficiency. In all instances, it is of paramount importance that label recommendations be closely followed.

LM

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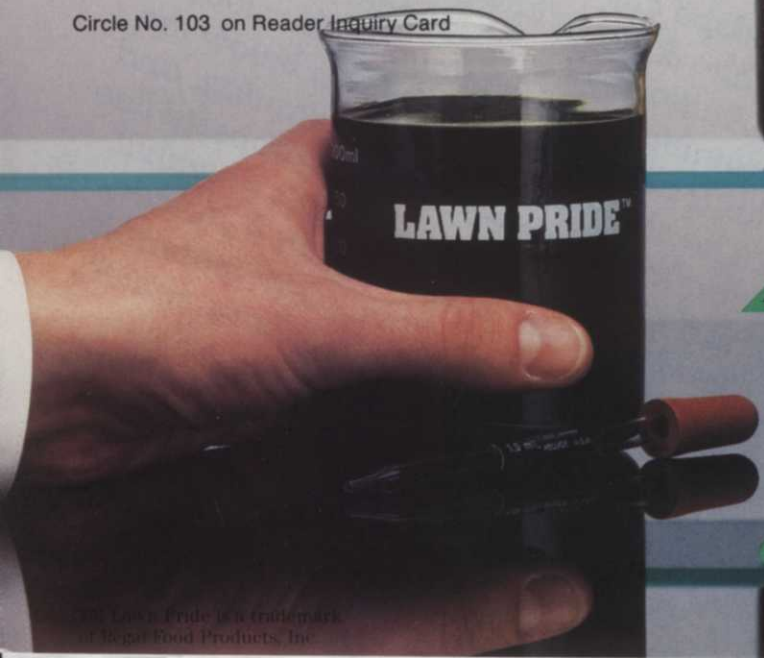

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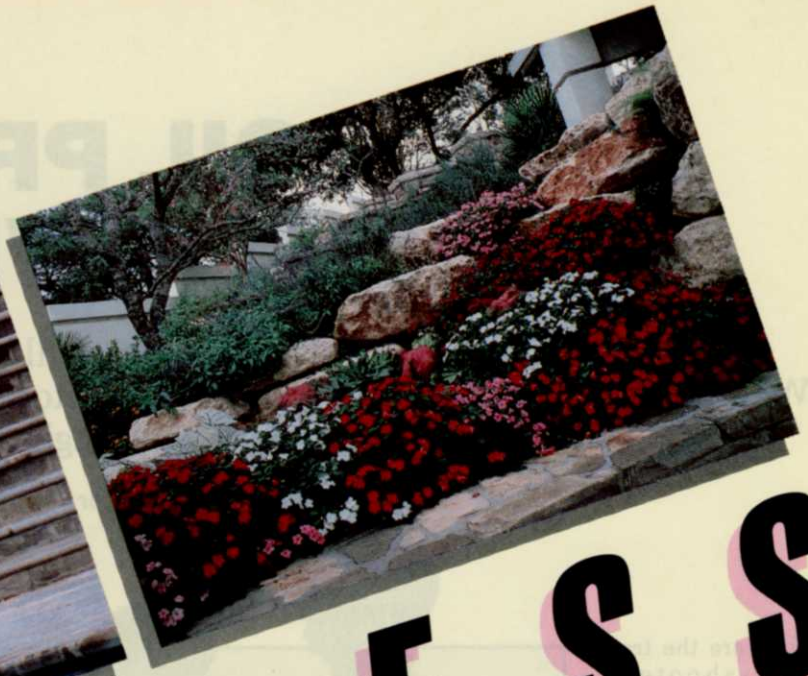
On Design

by Heide Aungst, associate editor

A SLOPING

A 30-foot slope challenged designer Fernandez Frazer White & Associates when landscaping this San Antonio, Tex. residence. The company used retaining walls to minimize the slope and allow for a pool, cabana and spa below the slope. The slope also inhibited planting, and trees had to be craned over the property line wall and placed in their locations downhill. Installer Milberger Landscaping & Nursery of San Antonio used native plant materials on the slope, such as yucca (above center), because of their drought tolerance.



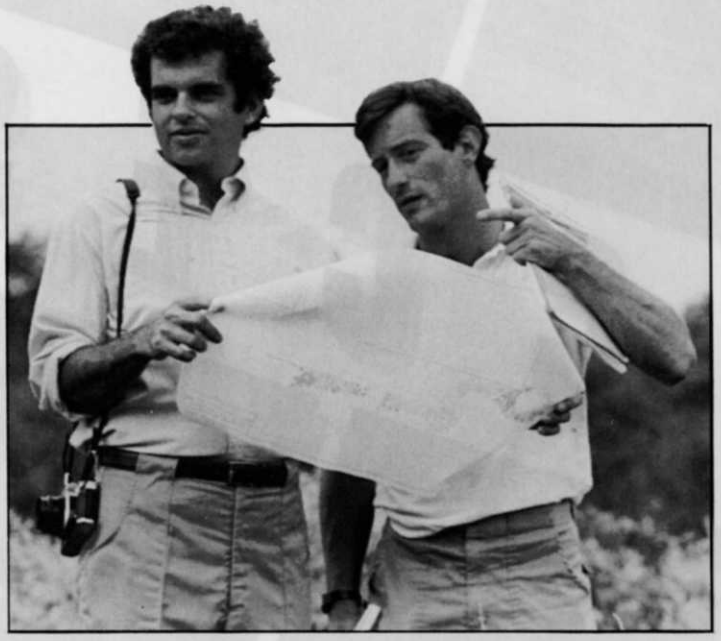
SUCCESS

Red impatiens highlight the home's entranceway (lower left), while caladiums decorate the front and side (top left). The design and installation, completed in spring 1986, won the National Landscape Association's "Certificate of Merit."

HAVE SOIL PROBE, WILL TRAVEL

Green industry consultants come in all shapes and sizes. Whether you're in the private or public sector, a landscape contractor or a golf course superintendent, you might need one some day.

by Jerry Roche, editor



Ken Miller (right) and associate Mike Miller on-site, the "first link in getting a client in touch with the last link."

They are the trouble-shooters. They're the hired guns of the turf industry. They're "consultants," and they come in all shapes and sizes, each armed with enough technical information to solve your problems.

But many landscape managers and golf course superintendents are not all that interested in them. Why? Because most consultants cost money—money that could just as easily be spent on fertilizer or a new mower. Yet they do exist—on any level from your local extension agent to the USGA Green Section to commercial interests—and they *do* have a place in the green industry.

Got a seemingly unsolvable problem with either your turf or your business? Don't be afraid to seek outside help, even if you've got to pay dearly. It will probably be worth it. "Consultant," by its very definition, is someone who specializes in answering specialized problems. Most have advanced college degrees; virtually all have seen problems you would probably never think of. And, through years of experience, they have the answers—or they know how to get the answers.

The trick to efficiently using consultants is to define your objectives before you start, and then work toward those objectives. Do you need an answer to a particular problem? Do you need help implementing a particular program? Or do you need an overall analysis of your operation or golf course, like an annual physical check-up?

Here, then, is a brief rundown of the kinds of consultants available to you, the landscape manager or golf course superintendent.

Agronomic consultants

You can find specialists in turf, trees, ornamentals or soil—virtually any horticultural or agronomic area. But they're in short supply.

"There's a deficiency in horticulturally-trained people," says Ken Miller, who owns his own consulting business in St. Louis. "It's not a financially attractive job; it's usually a labor of love. I think there's an incredible need in this type of service."

Miller, for one, offers specific services. He begins every job with a site inspection, tagging every tree and plant, giving the landscape manager a maintenance schedule, recommending purchases, and answering any particular technical questions.

"We're not pathologists or entomologists," says Miller, "but many times we're the first link to getting clients in touch with the last link."

Miller is a believer in problem-solving with plants. Erosion problems, traffic control, masking ugly sites and eliminating wet areas can all be accomplished through judicious use of plants.

"Many of the people that hire us are happy to get another management perspective," Miller notes. "But nothing I say means anything if the follow-through is not there."

Dorothy Borland runs The Turf Expert, Denver, Col. She is a frequent speaker at state turf conferences.

"Many lawn care companies and maintenance companies don't know anything about turf—they're businessmen," she observes. "I can act as a mediator for on-site problems and take a lot of time-consuming duties off their hands. I can take that time to fine-tune turf recommendations. Landscape managers have other things to do."

Borland lists some of the services she offers: training sessions for employees in class and in the field, soil tests, problem evaluation, maintenance program evaluation, irrigation evaluation, phone consultation and mediation between property manager and landscape contractor.

"In essence, consultants provide technical expertise in an area that may not be the landscape manager's specialty—for less annual expense than having a full-time staff member," Borland says.

Bob Moeller of Grounds Manage-

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ment Consultants, Carmel, Ind., cites these advantages of hiring a seasoned consultant:

1) the opinion of impartial professionals;

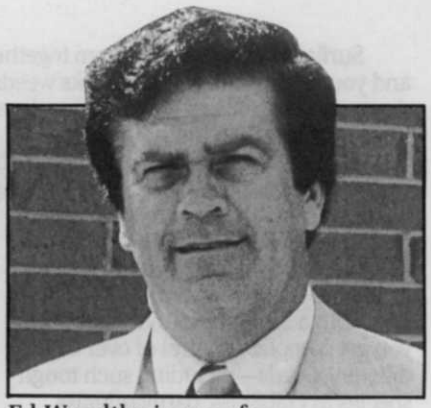
2) direct savings in cost of maintenance, personnel training and cost of supplies;

3) reduction in staff errors; and

4) individual attention to each facility.

The Grounds Management staff includes landscape architects; arborists and murserymen; specialists in turf, irrigation, maintenance and soil.

Dorothy Borland helps take time off clients' hands.



Ed Wandtke is one of a "very limited" number.

Extension agents

Agronomically-oriented, these are specialists in horticultural problems. They are paid by the land-grant college in your state and operate out of county offices so that they are probably the most authoritative people you can find for different geographical regions.

Janet Hartin, environmental horticulturalist for the San Bernardino County Agricultural Cooperative Extension, is responsible for the largest county in the nation, stretching from just east of the Los Angeles area all the way to the Nevada state line.

"The stronghold we have is that we are unbiased," notes Hartin. "And our goal is to extend research-based information to commercial agriculturists, including landscape contractors."

Services provided by the nation's broad network of extension agents include testing soil, water and tissue samples; publishing educational agronomic brochures; and making on-site visits.

"We try to offer on-site consultation unless we physically do not have the time to do it," says Hartin. "Most of the time it's a one-shot deal. We have a list of consultants who we know are knowledgable that we recommend."

Because of extensive field work, most extension agents have one specific day that they are in the office taking phone calls. If you plan on using extension agents as consultants, make sure you know their day in the office.

"Extension agents are great examples of narrowly-defined consultants," notes Ed Wandtke of All-Green Management Consultants, Columbus, Ohio. "They are uniquely qualified in a certain geographic area. And they're dynamite in that particular area."

Green Section

Superintendents of golf courses in the USGA can take advantage of the USGA Green Section's Turf Advisory Service, which has been in operation

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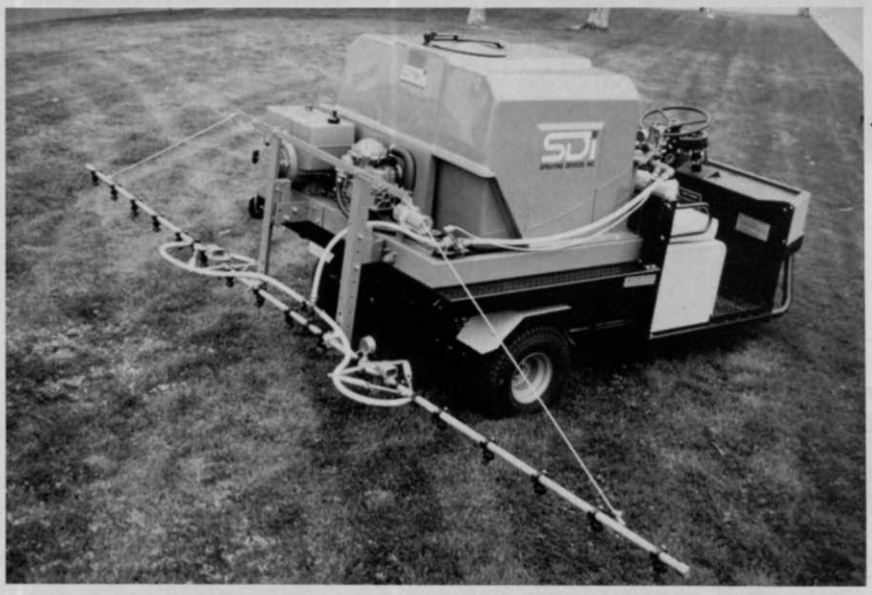

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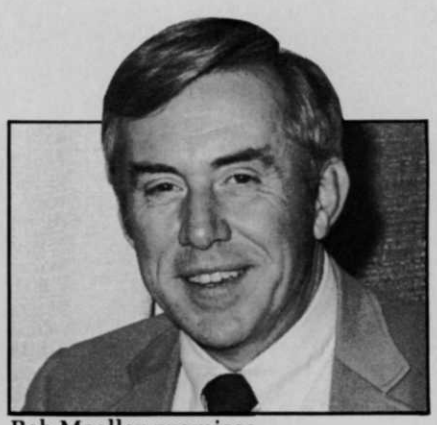
Janet Hartin's stronghold is her objectivity.

Bill Bengeyfield says Green Section "absolutely unbiased."



Bob Moeller promises individual attention.

since 1953. The service offers either a half-day or a full-day consultation for a minimal fee.

The consultation consists of a tour of the course by one of 10 regional agronomists, a discussion of all maintenance, an evaluation of individual problem areas and a written report.

"We're not trying to second-guess the superintendent," says Bill Bengeyfield, national director of the Green Section. "We're there as an employee of the course trying to form a conduit of information. We've helped superintendents sell ideas to their greens committees many, many times."

Each of 9 regional agronomists visits approximately 150 courses per year.

The Green Section consultants are unique in that they do not sell products, but are provided as a service to golf. "Our ace in the hole is that we're absolutely unbiased," Bengeyfield comments.

Business consultants

"Business consultants for advice in the industry are very limited," notes Wandtke, who with Dr. Rudd McGary writes a monthly column for LANDSCAPE MANAGEMENT. "The biggest problem is that most business advisors are not really experts in the industry and don't know consumer- or commercial-driven businesses."

Wandtke points out that his clients use All-Green's expertise in one of four ways:

1) for a particular project, like installing an accounting system;

2) for a one-shot "task," like a sales training seminar;

3) on call, as a 12-month-a-year consultant; and

4) on an informal basis as a member of the company's board of directors.

A final note

In your position as a landscape manager or golf course superintendent, you have to deal with turf poblems, business problems and people problems. It is the rare person who can be an expert in all areas. When a problem arises that you don't feel qualified for, don't be afraid to admit it.

Then seek out a consultant. **LM**

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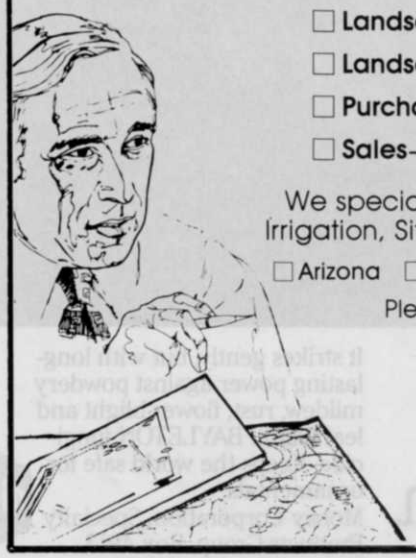

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A diving platform lined with marigolds and tubs of flowers floats in front of a flower-laden boathouse on Canadaigua Lake in New York.

'WILD' FLOWERS

Planting flowers doesn't have to be boring. Creativity and color can liven up any landscape.

by Ann Reilly, Bedding Plants Inc.

Stubborn traditionalists will plant flowering annuals in beds or borders, as edgings or mass plantings. Those a little more adventuresome will spot planters along walkways, on the porch of the clubhouse, as barriers in the parking lot.

But those who really want to have fun with flowers will let their imaginations run wild and plant annuals into anything that will hold media, plants and water. Creativity will show up in the planting of logos and colorful geometric designs.

Theme parks across the country are filled with animals and fairy-tale figures made from flowers. But you don't need to be a theme park to benefit from this type of planting. Americans love color...they love the unusual.

Wherever the public gathers, they love to see something unique, something different. So whether you're in charge of a park, shopping center, restaurant, hotel or commercial building, if you want to make a positive impression on the public, have fun with flowers.

On Canandaigua Lake in upper New York state, a diving platform lined with marigolds and tubs of flowers floats anchored in front of a flower-laden boathouse. The containers are PVC, and the media is an inorganic one that drains water quickly so the plants cannot be overwatered.

This particular planting is made of "Living Wall Gardens;" you can buy these pre-made modules or make them yourselves.

All the plants need is occasional feeding.

The Floating Gardens of Xochimilco in Mexico City may not be your goal by a long shot, but how about a float or two of flowers to attract interest in your pond or lake?

Containing color

Container gardening has been popular for centuries. Did you ever think about having fun with unusual containers?

At Buchardt Gardens in Victoria, B.C., annuals flow over the sides of an old rail car settled in a valley where it can be viewed from above. Floral managers have taken the whiskey barrel concept further and planted gardens into inner tubes and sawed-off garbage cans. Discarded drainage pipes work perfectly as planters, too.

Old Bethpage Historical Restoration planted a two-century-old children's wagon with flowers popular at the time. I've seen plantings in old work shoes, and, even in discarded toilets (an appropriate spot for the variety Royal Flush). As long as it works, use it!

PVC pipe has risen in popularity as a container over the last few years. It can be cut to length, stood on end, and provided with a base to keep it stable. It is then drilled with holes all around

and filled with young seedlings. It will not take long for the plants to grow and fill in and the entire planter to become a tower of flowers.

Soil-less media are used in the container with extra gravel at the bottom for weight and to ensure even drainage. Be sure drainage holes at the bottom are sufficient to prevent waterlogging.

PVC pipe of larger diameter can also be laid on its side and an opening cut into the top for a planting. Drainage holes should also be cut into the bottom and a bracing system (which could be bricks on either side) set in place to prevent rolling.

Besides the container itself, it's where you put it that can be appealing and fun.

At Rockefeller Center in New York, a restaurant is set up in summer on the ice skating rink. Geraniums are planted on the roof of the restaurant where they can be enjoyed from street level.

In Kalamazoo, parking meters are camouflaged with containers on each side (perhaps a bit unfair to the unknowing parker). Bathtubs filled with flowers sit in front of restaurant windows from Brooklyn, N.Y. to New Orleans, La.

Empty tree stump? Don't remove it; fill it with flowers! Want a carpet of color on the side of a patio, but can't find a low, flat planter? Set plants directly into a bag of potting media, water, and watch them grow.

When you can't find just the right thing, make it yourself. This is especially useful in creating animals and other topiary forms or in making vertical gardens.

Forms can be created, with wood if necessary as an interior support, and molded to shape with chicken or turkey wire. Fill the form with soil-less media and push the plants into place through the holes in the wire. Vertical gardens are especially useful in areas where space is limited, but a mass of color is desired.

Annuals flow out of a planter at Buchardt Gardens in Victoria, B.C.

The recommended medium for any type of container planting is a soil-less mixture of 50 percent organic material, such as peat moss, and 50 percent inorganic material, such as perlite or vermiculite. Some floral managers substitute compost, leaf mold or fine bark chips, if available, for peat moss. Sharp builders' sand can be used instead of perlite or vermiculite; the good news (and the bad) is that sand is much heavier.

This would make the use of sand undesirable in hanging baskets or in large containers that would need to be moved from time to time. However, for small containers that are in a spot where wind might blow them over, the addition of sand would stabilize them.

Care of container plantings is relatively easy and low in maintenance requirements. You can work with your local greenhouse or bedding plant supplier to have mature plants ready to burst into color at proper planting time, which would be around the last frost date in your area.

Designs and logos require no more care than normal plantings.

Carefully caring

After filling the container with the potting medium almost to the top, simply transfer the flowering annuals into the container, planting them at the same depth at which they grew in the pack or flat.

Since containers are most effective when they create a mass of color, it would be best to overplant them slightly—but without crowding. Water after planting and watch them grow!

Once every week or two weeks, include a soluble fertilizer when you water, following label directions. It is better to feed once a week at one-fourth strength than once a month at full strength to achieve more even growth. If light hits the container unevenly, rotating it a quarter turn every week or so will also help to keep growth even. If the container is very large, you might want to consider placing it on caster or a turntable to facilitate rotation.

How often you water depends on the size of the container and the weather conditions. The larger the container, the less often you will need to water. When it becomes very hot or very windy, water will be needed more often.

If your containers can be reached by your normal irrigation, you won't have to give it a second thought. Hanging baskets and containers on the clubhouse patio will probably have to be watered by hand. This can be made easier with use of a water wand at the end of a hose, with an extender to reach hanging baskets.

With the proper selection of plant material that self-cleans (impatiens, begonia, ageratume, nicotiana, sweet alyssum), you won't have to consider

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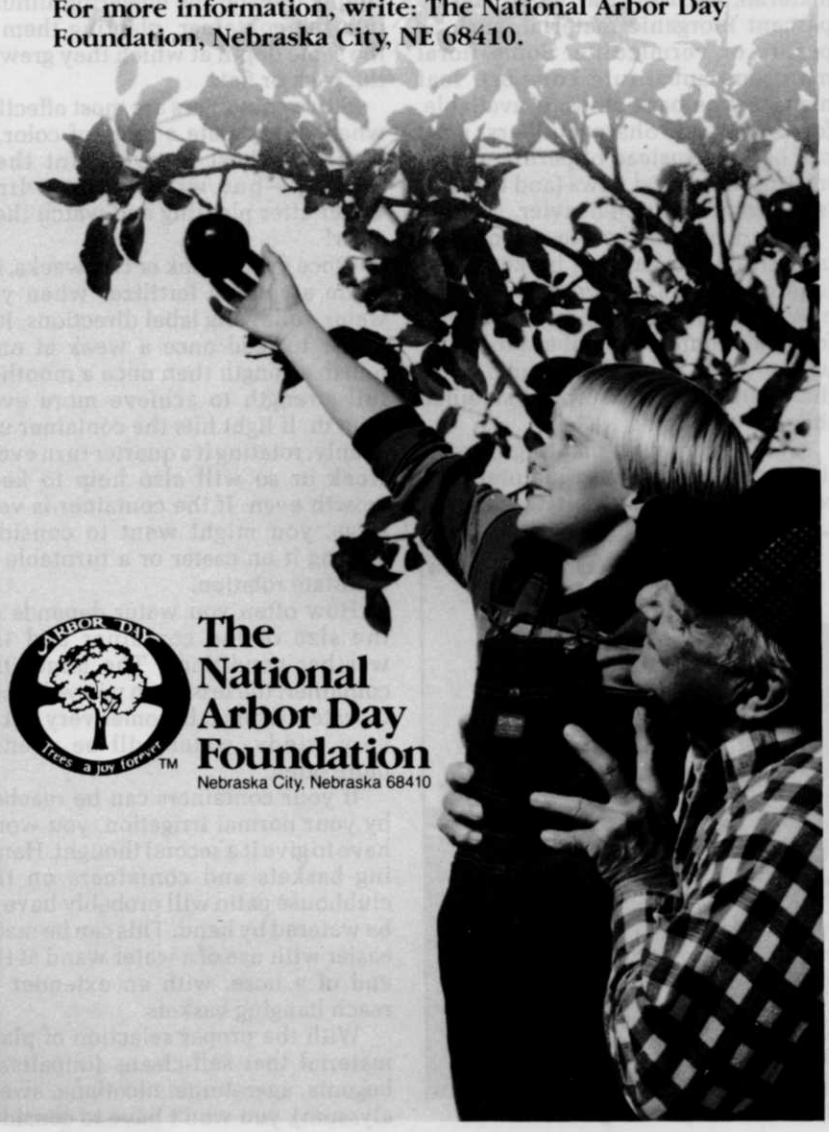

The National Arbor Day Foundation
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clipping off faded flowers. If you use plants like geraniums or zinnias, cut the blooms away as they pass their peak to keep the container neat and in maximum bloom.

Designated designs

Another fun thing is planting flowered designs. Everyone is familiar with the friendly face of Mickey Mouse that welcomes millions to Disneyland and Disney World each year. The city of Denver plants its name in front of the capital building each year.

Last year's Expo in Vancouver saw its logo planted outside the main entrances. Commercial firms often plant their logos on a hillside in front of the administration building. Some parks plant geometric designs just for fun.

Designs and logos require no other care than normal plantings, except that a sharp eye must be kept to make sure one plant doesn't start to encroach on another plant's spot. When choosing plants for logos and designs, select compact, low growing ones in colors that are highly contrasting. Good examples are the red, yellow or green-leaved alternanthera; red, pink or white begonia; silver dusty miller; or blue ageratum.

When planning and planting logos and designs, it's best to plant them on the side of a hill or create a berm so the logo will be more visible to passersby.

Here are some annuals that can be easily adapted to the aforementioned uses:

Pansies. Use in spring or fall where summers are hot or all year-round in more temperate climates. They prefer sun as long as it's not too hot or dry. Look for the weather resistant F1 hybrids when selecting varieties.

Petunias. Versatile petunias are so popular for many reasons. For containers, you can select one of the larger flowered grandifloras, but you'll probably find that the multifloras will give you better performance with less maintenance and are more weather tolerant as well.

Salvia. Excellent for containers where a tall, spiked accent is needed in sun or part shade. Red, white, purple or salmon varieties are available.

Sweet Alyssum. Fragrant spreading plants with white, rose or violet flowers. Like sun, heat and dry conditions.

Vinca. Weather-, heat-, pollution- and sun-resistant.

Zinnia. Use these colorful annuals in the sun where air circulation is good to avoid mildew, a problem with zinnias. Use the low-growing zinnias in containers to take advantage of their compact habit. **LM**

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MARKETING MANUEVERS

As the landscape management market grows more competitive, companies need to gather more information to stay alive. Here are some points not to be overlooked.

by Rudd McGary and Ed Wandtke

Many companies in the green industries are excellent at collecting operating and financial information. Productivity, cash flow, financial strength and overall operating efficiency are addressed by most good managers of green industry organizations.

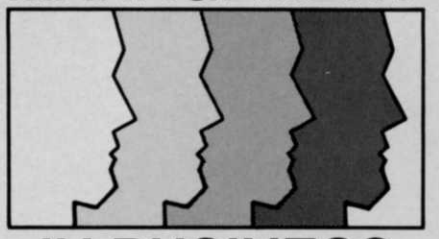
The marketing function and the information needed to successfully manage this function are extremely important areas that often are not tracked with the same amount of efficiency found in other operating areas.

As the green industries grow more competitive, collecting at least some basic types of marketing information becomes more important.

The key elements can be broken into two categories:

- external information (information concerning potential customers) and
- internal information (tracking of performance of various aspects of marketing).

MANAGEMENT



IN BUSINESS

External information

Outside information needed for planning marketing consists of demographic and geographic factors.

Demographic factors worth tracking in the residential market are average income, home value and median age of your current customers. These will help you to determine those customers you should target for the upcoming year based on last year's performance.

(This information is available through mailing houses, marketing survey companies and government publications.)

If you are working in the commercial side, you should be looking at the types of companies for whom you work, their size, and the key personnel involved in making the buying decision for that type of company. This will help you to put together a marketing plan to target companies similar to those you already service. This helps your source credibility in making new contacts, and gives you a good sense of the costs involved in working for the types of companies you now service.

Geographics will help you determine areas that see your vehicle and workers fairly often. In the residential market, the presence of your vehicles acts as both an advertising piece and gives a good sense of source credibility.

In the commercial area, your vehicles and workers can be seen on the property, and this also acts as both advertising and building source credibility. You should be aware of the geographic considerations of your current customer base because of factors other than marketing.

From an operating standpoint, you can tighten up your routes, have less travel time, and be able to get high productivity from your applicators and workers. This will also affect your monthly and yearly financials since you will be more productive overall.

Once you have information on demographics and geographics, you should combine them to see if any current buying patterns occur.

Servicing a next-door neighbor or business is generally the best way to increase your sales. By knowing where you are and who you service, you can take excellent advantage of your customer base.

Internal information

Within this marketing information you should find ways to better control your sales and advertising efforts.

Servicing a next-door neighbor is a way to increase sales.

Some key figures should be collected in order to look at your overall marketing efficiency.

1. How was the lead generated? You should ask any customer calling how they heard about your company. This is not a completely accurate way of getting information since it relies on consumer recall. But it at least will yield some patterns, hinting whether your advertising dollars were well spent, and thus creating a basis for planning next year's compaign.

2. How many sales calls did your sales force make in a given period? (Day? Week? Month?) This will give you the average amount of time taken to contact a customer. You can then determine the need for a larger or smaller sales force.

3. What was the closing (conversion) ratio of the sales people? This, in addition to No. 2 above, will give you an idea of how effective a given individual is as a salesperson. Some people will have a high closure rate, but see few people. Some will have the reverse.

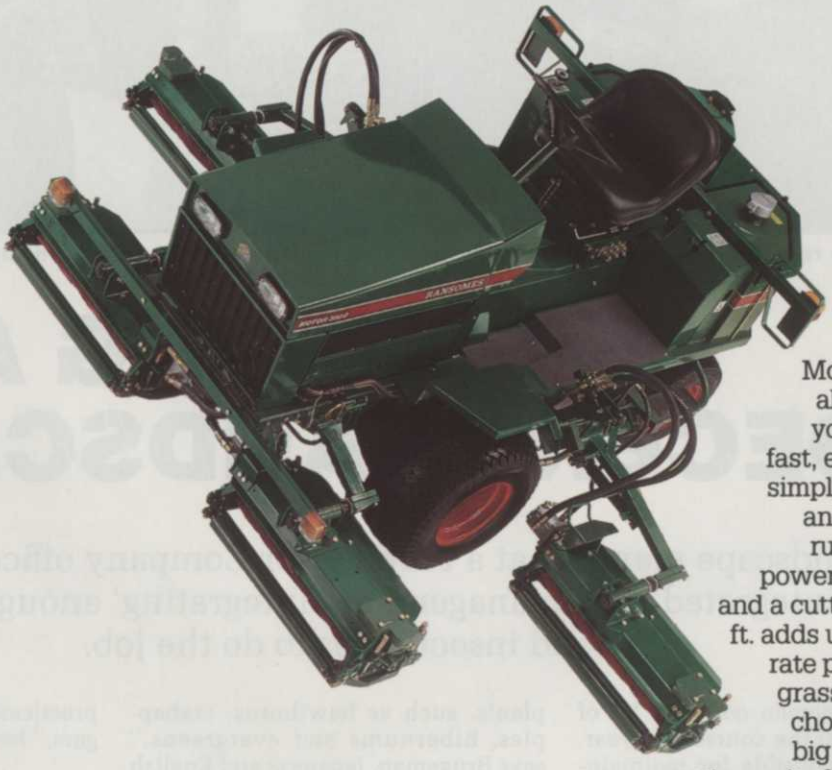
For a company to be successful,

continued on page 108

Wandtke and McGary are senior consultants with All-Green Management Associates in Columbus, Ohio. Dr. McGary focuses on marketing and managenent issues. Wandtke focuses on operations and financial questions.

The storied Broadmoor Country Club at the foot of the Rockies in beautiful Colorado Springs, Colorado.

Grounds for Ransomes.



Trimming the grounds and fairways of the Broadmoor on a Motor 350D from Ransomes is what a Rocky Mountain "high" is all about. It brings you the benefits of fast, efficient mowing, simplicity of operation and a real saving in running costs. The powerful diesel engine and a cutting width of 11½ ft. adds up to a high work rate potential for large grass areas. There's a choice of fixed head, big diameter Magna cutting units for long grass and floating head Sportcutter cutting units for fine turf, especially on undulating ground. And that's grounds for seeing your Ransomes Bob Cat distributor. Or, call Ransomes, Inc., One Bob Cat Lane, Johnson Creek, WI 53038, (414) 699-2000.

RANSOMES

The grass machine.

Circle No. 151 on Reader Inquiry Card

Dow Sales representative Barry Brown dicusses insecticide treatments with Ford supervisor John Brugeman.

AF-FORD-ING A DECENT LANDSCAPE

The landscape manager at a Ford Motor Company office is an advocate of 'integrated' pest management, 'integrating' enough herbicides and insecticides to do the job.

John Brugeman covers a lot of ground in the course of a year. He's responsible for maintaining the 750 acres that make up the Ford Motor Company's Research and Engineering Center located in Dearborn, Mich., just outside of Detroit.

Like most top companies, Ford takes pride in its landscapes and devotes considerable time and resources to project a quality image. The company's Research and Engineering Center employs about 20 technicians and supervisors who report to Brugeman. His budget is about $100,000 per year for fertilizers, pesticides, herbicides and replacement plants.

"Our landscape includes a wide variety of shade trees and ornamental plants, such as hawthorns, crabapples, hibernums and evergreens," says Brugeman. Japanese and English yews and junipers are also found there, although in limited numbers. The greenswards are composed of a bluegrass blend along with some perennial rye and fescue.

Of the 750 acres, equivalent in size to four golf courses, about 200 acres are Grade A and Grade B lawns.

"Grade A is highly maintained turf, usually irrigated," he explains. "Grade B is also highly maintained, but has no irrigation."

Brugeman, a 20-year Ford employee, is an advocate of integrated weed and pest management. "I probably place more emphasis on cultural practices than most landscape managers," he says.

Weed control

"By maintaining healthy turf through proper application of fertilizers and aerification, we can eliminate many weeds. With frequent, high mowing we have a nice looking landscape," he says.

In spring, Brugeman's staff spot sprays herbicides for dandelions and other weeds. In late August, or even into October, they will spray the whole area to catch a broad spectrum of weeds.

"If we do a good job in the autumn, what's left in the spring is minimal.

continued on page 92

"OUR GOLF COURSE HAS TWO PROS. I'M ONE OF THEM. THE OTHER IS OUR WOODS RM 90."

Mr. Tim O'Leary
Member—Wilson Sporting Goods
National Advisory Staff
Part owner, general manager, and pro
Lost Nations Golf Club
Dixon, Illinois

After 15 years at the same golf complex, Mr. O'Leary has come to the conclusion that their two year old Woods RM 90 is, "far superior to any type of mower…including reels. It mows weeds and grass under wet or dry conditions, and the maintenance savings alone paid for the mower in the first year."

If you're in charge of mowing a golf course, park, school, cemetery or industrial site, it would pay you to get to know the Woods RM 90 better. It's 7-1/2 ft. cutting swath cuts the big jobs down to size by mowing up to 4-1/2 acres per hour.

For complete information on the RM 90, contact Woods, Division of Hesston, Dept. PM, Oregon, Illinois 61061.

40
years of
QUALITY
1947-1987

WOODS

Division of Hesston Corporation
Oregon, Illinois 61061

Circle No. 258 on Reader Service Card

The landscape at Ford Motor Company stretches to the size of four golf courses.

And if there are no weed problems in the spring, we won't spray."

Brugeman tried Turflon D herbicide last year and found that it controlled a broader spectrum of weeds than the other products he was using. "It gave us greater control because of its quicker response," he says. "We'll use it exclusively after we've used up some of our remaining inventory."

Insect control

"On our ornamental shrubs and trees, we usually apply two or three cover sprays of insecticide per year as a preventative measure. We don't feel it's necessary to do that on turf. The cost incurred wouldn't be worth it unless we have a serious problem.

'I probably place more emphasis on cultural practices than most landscape managers.'

—John Brugeman
Ford Motor Co.

Brugeman helps prevent insect problems on shrubs and trees by thinning and eliminating dead wood and other environments where insects might thrive. "If you've got dense foliage in a shrub bed along with high humidity, you've got hiding places for insects. If you can eliminate them and still maintain the aesthetics, design and intent of the landscape, you're doing your job properly."

According to Brugeman, the most serious insect problem currently experienced in Michigan is the black vine weevil. "It's tough to control and attacks numerous ornamental plants. It's a root, foliage and turf feeder, and is nocturnal."

The Michigan Association of Nurserymen recommends some chemical treatments for the black vine weevil.

"We're using Dursban 50W in water-soluble packets on our ornamentals," he says. "I appreciate the obvious safety, container disposal and accurate dosage features of a water-soluble packet. Safety to my employees is an important consideration."

To protect its employees, Ford maintains a hazardous communications program, involving company control over all products used by its employees.

Safety by Ford

"All manufacturers must submit material safety data sheets to our toxicology department," Brugeman says. Those sheets are carefully reviewed. The company then publishes its own material safety data sheets that communicate hazards, safety limits, storage instructions and protective equipment requirements. "It provides us with all the information necessary to ensure proper and safe use of products. The toxicology people won't recommend unsafe products."

The most serious insect problem in Michigan is the black vine weevil.

Brugeman holds a B.S. degree in ornamental horticulture from Ohio State University. He has been a director of the Professional Grounds Management Society, was president of the Detroit chapter of that organization and belongs to the Michigan Turfgrass and Michigan Forestry associations.

He's a knowledgeable corporate executive very much aware that a professional job of landscaping goes a long way in enhancing a corporation's image. **LM**

TOUGH / EASY

in the rough on the green

You get the best of both worlds with the New Holland LB-620. A tough, articulated loader/backhoe that's easy to operate in rough spots and tight spaces. And, a lightweight low-profile design, with a softer touch on turf.

Balanced design

The low-profile design distributes the weight over each drive wheel for full ground contact and a softer touch on turf. Positive four-wheel hydrostatic drive combines with four-way articulation to give you the flotation and traction you need in rough spots and soft spots, and adds extra stability on slopes and rough terrain.

With a tighter turning radius, and a lower profile, the LB-620 works in spaces that are too tight for other loader/backhoes.

Deep digging— high dumping

Powered by a 53-hp diesel engine, the backhoe has a digging force of more than 10,000 pounds, and digs 11′-13′. The ⅝ cubic-yard capacity loader moves into the load with a breakout force of 6,442 pounds. Dump height is more than nine feet.

Easy transport

The compact LB-620 makes job-to-job transport easier, too. You tow it on a trailer behind a one-ton pickup. Yes, the LB-620 takes on the toughest jobs—but works with a soft touch. Ask your New Holland dealer for a demonstration, or write to Ford New Holland, Inc., 500 Diller Ave., New Holland, PA 17557.

Ford
FORD
NEW HOLLAND

Circle No. 127 on Reader Inquiry Card

Alligatorweed a monster of a problem

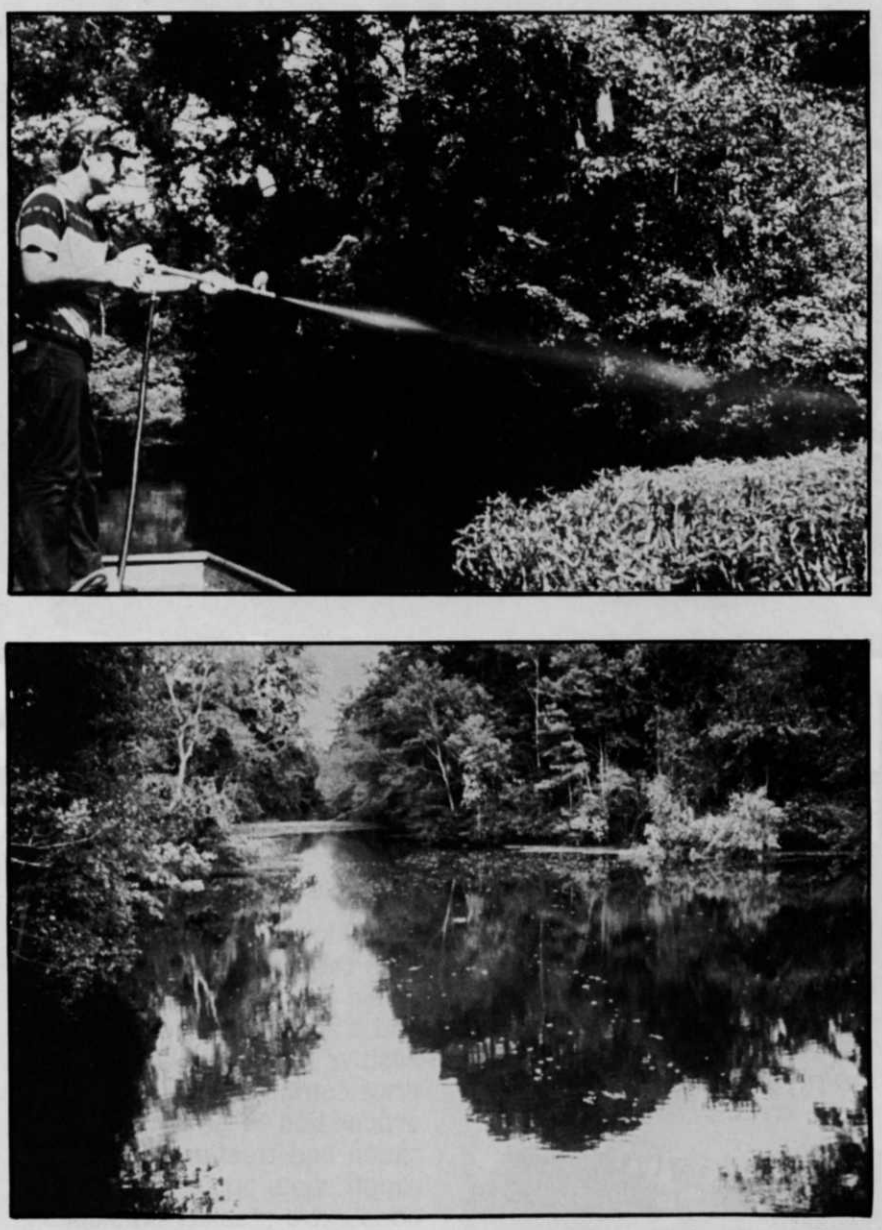
Because it provides a vital link to the Albemarle Sound and Atlantic Ocean, the Scuppernong River in northeastern North Carolina has long been an important artery for commercial and recreational fishermen, duck hunters and other boaters.

Alligatorweed infestations along the Scuppernong, however, have been so intense that a large portion of the river had to be closed several years ago, forcing boaters and fishermen to search for other navigable waterways.

Heavy aquatic weed growth also restricted water flow from tributaries and drainage canals feeding into the Scuppernong, raising the likelihood of the river overflowing onto farmland and residential property during storms.

Like the Scuppernong, other major rivers, tributaries and canals in the coastal plains of North Carolina have been adversely affected by alligatorweed for many years. Only recently has a concerted effort begun to bring infestations to manageable levels, benefitting municipalities, farmers and residents.

"Alligatorweed is the most prevalent and economically most costly aquatic weed in North Carolina," says Dr. Ken Langeland, former assistant professor of crop science at North Carolina State University and current assistant professor at University of Florida. "It is a prolific warm-season perennial, with an extensive rhizome and stem system, and the ability to form thick floating vegetation mats. Those mats can impede navigation, reduce water quality and increase sedimentation rates. They also can cause major flooding in a short time, and that can really devastate crop production in the coastal plains."



Alligatorweed cluttered much of the Scuppernong River (top), cutting off an important link between the Albemarle Sound and the Atlantic Ocean in North Carolina. But within a few weeks of spraying Rodeo, an aquatic herbicide, much of the vegetation was gone and the river was opened for fishing and boating (bottom).

Chemical control

Alligatorweed control with herbicides is not a new idea in North Carolina. The Army Corps of Engineers, Wilmington District, initiated an alligatorweed management program in canals and drainage ditchbanks during the 1960s that relied largely on silvex applications. By 1970, the program was abandoned, due both to environmental sensitivity and a general feeling that alligatorweed was no longer a significant problem.

In the intervening years, mechanical methods, including dredging and draglines, and biological controls were occasionally used to fight alligatorweed. These efforts were costly and time-consuming. But, as the experience in the Scuppernong River demonstrates, they did little to stem the weed's proliferation.

"As a result, by the early 1980s, alligatorweed infestations increased seven-fold over 1963 levels. The weed was spreading not only in canals and rivers, but also turning up in privately-owned ponds and ditches used for irrigation," Langeland recalls. "The extension office began receiving large numbers of requests from farmers and other residents for information on how to control alligatorweed."

In response, the North Carolina Department of Natural Resources and Community Development, in conjunction with the North Carolina Agricultural Extension Service, under

continued on page 108

There's no better value for crabgrass control than Balan. And none with more experience. It's been used more years by more golf course superintendents than any other granular preemergence herbicide.

Its easy-to-spread clay carrier is one reason why. It makes application more uniform, reduces the dust common in other carriers and also increases your equipment calibration accuracy.

With Balan, you get superior preemergence crabgrass control for eight to ten weeks with a single application. Then you can overseed or perform other turf management jobs, without worry of reduced seed germination. If you want longer control, the Balan price allows you a second application.

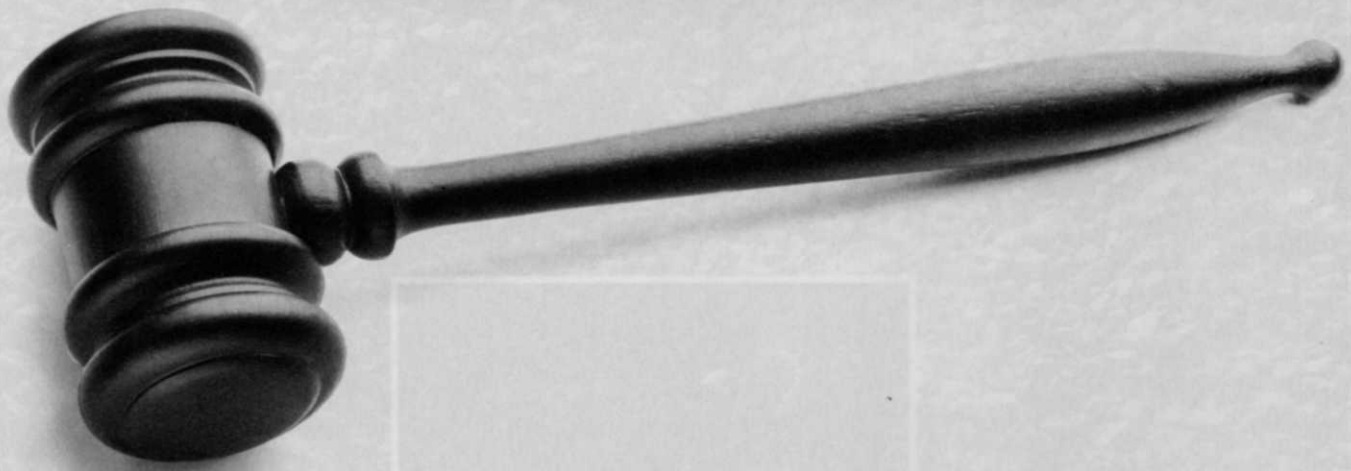
Balan. The better spreader. Talk to your Elanco distributor soon. Or write:

Elanco Products Company
A Division of Eli Lilly and Company
Lilly Corporate Center, Dept. E-455, Indianapolis, IN 46285, U.S.A.
Balan®—(benefin, Elanco Products Company)

Circle No. 118 on Reader Inquiry Card

Proven Balan®. The better spreader for crabgrass control.

IF YOU'RE STILL USING CONVENTIONAL PESTICIDES, BE PREPARED TO HEAR OPPOSING ARGUMENTS.



Despite mounting evidence of the drawbacks of conventional, *petrochemical-based* pesticides, some companies continue to use them. Yet consider the situation that exists.

Consumer sensitivity to the problems associated with conventional pesticides has reached an all-time high. At the same time, the number of liability suits brought by employees of companies that rely on them grows by the day.

Why run the risk? Why not use the pesticides that contain *no* petrochemicals? Why not play it Safer™?

Scientifically derived from biodegradable ingredients, Safer pesticides are safe and effective. In other words, you can use them without worry. And if you're a crop producer, you can use them right up to harvest time.

To find out more about the advantages of Safer pesticides, phone the Safer Technical Hotline at 1-800-544-4453. Or call Safer, collect, at 617-237-9600.

And judge for yourself.

Safer™

The Safer Pesticide

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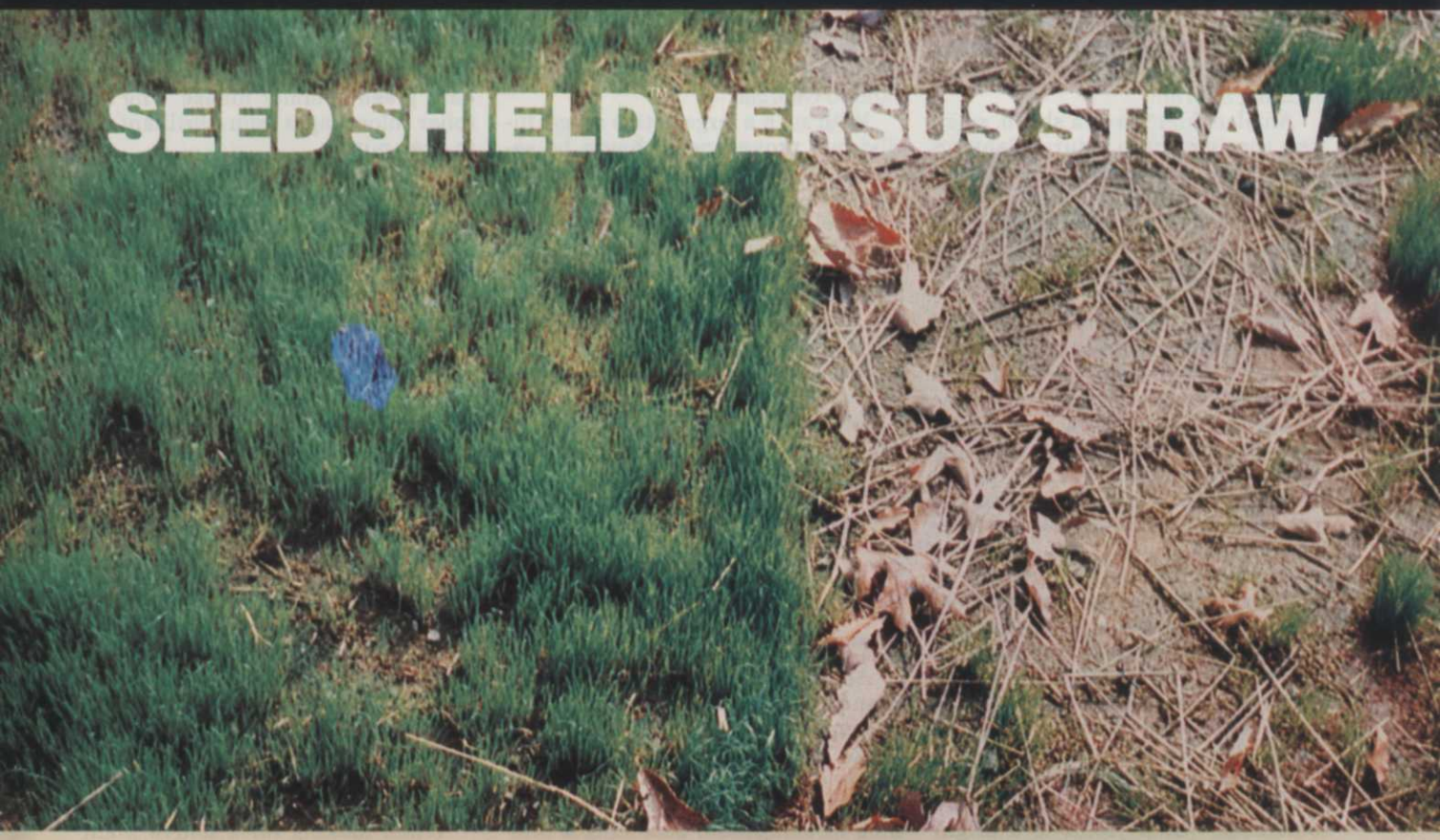
Circle No. 153 on Reader Inquiry Card

The Bare Facts



USCO Landscapes project, Richmond, VA—SEED SHIELD was tested by a professional landscaper against straw in covering grass seed.
Both areas were identically prepared, seeded and subjected to the same growing conditions including a 6 week drought.
But then, after 1 week of identical watering, the SEED SHIELD covered side (left) showed dramatic germination results compared to the straw covered side (right).

Betty Staples, Owner
USCO Landscapes, Richmond, VA

"SEED SHIELD cuts germination time in half."

"I was skeptical about using SEED SHIELD at first," admits Betty Staples, a professional Richmond, VA landscaper. "But after using it on several commercial and residential projects since September, I am sold on it.

"On the average, using SEED SHIELD along with proper soil preparation and watering, I've been getting over 90% germination in 4-5 days for fescue. With a straw covering, it generally takes twice as long to get just 60% germination and considerably longer to get full germination.

"SEED SHIELD seems to hold just the right amounts of heat and moisture. I was able to get excellent fescue germination in October and November despite extreme weather conditions including drought and drastic temperature changes. Plus only one daily watering was needed instead of the usual 3 required with straw.

"It also solved a number of other landscaping problems. I got fewer bare spots. SEED SHIELD virtually eliminated debris from the new grass. It cut down on wash caused by rain. And it kept the birds from eating the seeds.

"I've recommended it to homeowners and other landscapers as being very cost-effective in the long run for producing faster, healthier sod quality growth. Plus it can let you seed earlier and later in the season than straw."

For faster, fuller grass and profit development, talk to A.C.F., Inc. about the unique, new SEED SHIELD fabric.

SEED SHIELD™
A.C.F., Inc.

Distributor for AMOCO

Manufactured by Amoco Fabrics & Fibers Co. for Atlantic Construction Fabrics, Inc.
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Circle No. 167 on Reader Inquiry Card

RESEARCH UPDATE

Amelanchier, a native for all seasons

by Douglas Chapman, Dow Gardens Center

Amelanchier, a member of the Rosaceae family, is a unique genus with two spectacular species and an exciting hybrid.

Amelanchier fits as a shrub, small tree, specimen or in natural plantings in parks, commercial or home landscapes.

Amelanchier is native from New England to Georgia and west to Iowa. It grows along streams or rivers in rich, fertile soils.

Although it can grow in many soil types, the soil must be well drained. It must be grown in areas of high humidity. Amelanchier fluorishes in sun or shade. It is low maintenance, rarely requiring pruning; needs little or no fertilizer; is infested by few scale insects; and the only important diseases are fireblight and rust.

Shadblow or serviceberry (*Amelanchier arborea*) is the smallest native in cultivation. It is a round multi-stem shrub, reaching 15 to 20 feet, or up to 30 feet in a few native situations. Its silver-grey bark has subtle black stripes which are quite effective during the winter.

The leaves, as they emerge during late April, are covered with silvery tomentose which yields to a bright green leaf of summer. The fall color varies from yellow to a spectacular scarlet. The foliage is particularly vivid in the fall. The flowers are a pure white at full bloom as the leaves unfold middle to late April.

In fact, they are one of the first native plants to bloom at about the time of rhododendron "PJM." Shadblow is native from New England to Georgia.

With such a large native range, individual provenances should be selected for each region of the country, like the Great Lakes.

Amelanchier is particularly tolerant of salt spray. Allegheny serviceberry (*A. laevis*) is a medium-sized tree, reaching 40 feet in height—the largest Amelanchier. Its habit is a very upright oval.

As the leaves emerge during late April, they are covered with silvery tomentose which yields to a bright green leaf of summer.

Amelanchier laevis is frequently found native, growing as a single-stemmed tree with light silver-gray bark. The white flowers are very showy during late April.

The new leaves are reddish at the time of elongation, becoming a brilliant lime-green during summer.

Like shadblow, it is tolerant of flood conditions yet prefers well-drained, fertile soil. Apple serviceberry (*A. X grandiflora*) is a plant with morphological characteristics between its native parents. Apple serviceberry is a hybrid of *A. arborea* and *A. laevis*. The new leaves that unfold are purplish in color and yield to a dark green summer foliage. The fall foliar color ranges from a brilliant red to deep purple.

The white flowers which are in full bloom during late April are larger than either one of the parents. It has been reported that the flowers are held erect, but I can't say this is reliable as a key identifying characteristic.

The flower bud, just prior to opening, is pink—a good identifying characteristic. The flower at full bloom in late April is a pure white.

In general, amelanchier species are confused in the trade. Many plants available for sale are, in fact, *A. X grandiflora*.

The only time to definitely identify species is as the flower buds expand and the leaves unfold. Apple serviceberry is slightly larger than *A. arborea*. *A. X grandiflora* has a multi-stemmed habit with more spectacular flowers. All three individual types require little or no pruning, grow in sun or partial shade, and have fruit that starts out green in the early summer and changes to red and, finally, a blueberry-colored blue-black.

When looking for a native plant that will fit many landscapes as a specimen or mass border plant, in full sun or partial shade, in rich fertile soil, then either one of the three Amelanchier is a good choice.

Amelanchier is an outstanding four-season plant. **LM**

NEXT MONTH

Renovated Olympia Fields Country Club
Turf Disease Control Guide
Right-of-way maintenance
Wildflowers for your landscape
Keeping it clean: Torre & Bruglio Landscaping

IN THIS ENVIRONMENT, IT'S EASY TO SEE WHY ROUNDUP® IS THE HERBICIDE OF CHOICE.

Jim Donaghy is District Manager for Philadelphia's Fairmount Park Commission, one of the largest city parks in the country. When Jim recommends a herbicide, he's not only concerned with weed control, he's also concerned with the well-being of thousands of park visitors. For him, that herbicide is Roundup.® Here's why:

First, Roundup works. With Roundup he gets through-the-root control of just about every kind of labeled grass and broadleaf weed he's liable to come across. Even brush is controlled by Roundup.

Second, Roundup works for pennies an application (one gallon of spray solution can treat 30 tree rings for about five cents each). With 8600 acres in the total park system, cost control is essential. Roundup really delivered on this point because it has eliminated more than 70% of hand-weeding and the expensive overtime costs that go with it.

But it's the third reason that probably weighs the most in the buying decision for Roundup: its environmental characteristics. Roundup does not wash, leach or carryover in the soil…and it's biodegradable, odorless and practically non-toxic to fish, pets and people. In Mr. Donaghy's words: "We're using Roundup because we're getting the results they claim. And definitely because we are in such a high traffic area. That's the biggest consideration. If I had only one herbicide to use, it would be Roundup."

There are a lot of herbicides from which to choose. But, take it from Jim Donaghy, there's only one that's *choice:* Roundup.

FOR A FREE, FULL-COLOR ROUNDUP GUIDE TO TRIMMING AND EDGING, CALL TOLL-FREE 1-800-332-3111

ALWAYS READ AND FOLLOW THE LABEL FOR ROUNDUP HERBICIDE.
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Monsanto

Circle No. 141 on Reader Inquiry Card

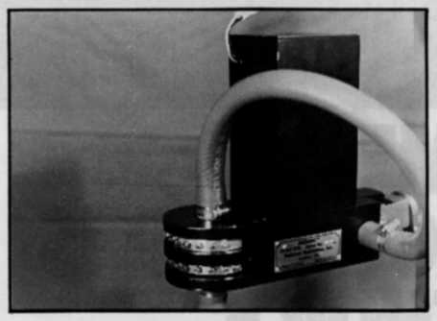
PRODUCTS

Turf 'system' has many applications

The Radiarc Turf System can be used for pre-emergence weed control, herbaceous vegetation control, brush control or many other applications.

The Radiarc will yield uniform application rates, control of spray drift, economical low volumes and absence of fine particles which produce swath displacements.

For best results, the Radiarc can be mounted at the rear of a skidder or other rough terrain vehicle. A mounting height of six to eight feet is common. A variety of nozzle sizes and placements is possible with the Radiarc.



Circle No. 191 on Reader Inquiry Card

Company formed to sell pesticide detector

A new company, Enzytec, has been formed to market a quick, easy and inexpensive pesticide detector developed at Midwest Research Institute.

The pesticide detector itself provides a simple and reliable on-the-spot test to detect within minutes the presence of either organophosphates or carbamates.

Lawn care services can use the detectors to demonstrate the extent of coverage and to monitor drift. Other uses are to test spills, to monitor cleanup operations and to determine contamination of surface and groundwater.

Circle No. 192 on Reader Inquiry Card

Fairway drag system keeps courses groomed

The new Blue Mountain Fairway Drag System promotes the growth of beautiful, healthy, disease-free turf while reducing labor, wear on machinery and fuel usage.

The system helps:

- prevent clumping and matting;
- mow any time of the day or night;
- keep fairways beautifully groomed;
- save money, time and effort; and
- stop dollar spot.

An exclusive feature of this system is a free-floating swing arm that allows the system to be used on most uneven terrain, dragging the net smoothly over hills and bumps. For storage or transportation, the arms can be easily raised and the net folded and hung on retaining hooks.

Circle No. 193 on Reader Inquiry Card

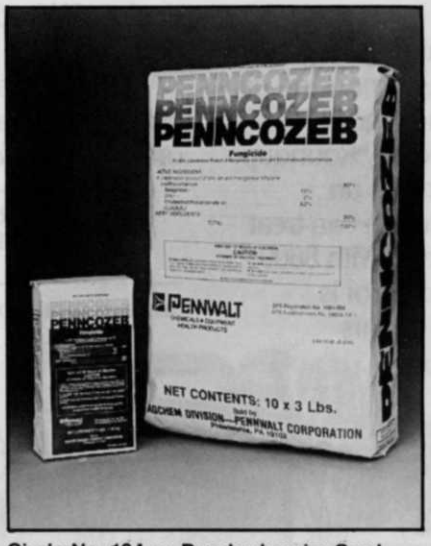
Fungicide gets label for turf market use

Penncozeb fungicide from Pennwalt Corporation has received registration for use against most common turf grass diseases and major fungus diseases of certain ornamentals.

Penncozeb, the trade name for mancozeb, is a wettable powder which can be applied with ground or aerial equipment. The fungicide can provide control in as little as three hours after application. It is available in three- and 50-pound quantities.

Penncozeb is effective on fusarium blight, brown patch, pythium and petal blight, dollar spot and leaf spot.

Ornamentals it is registered for use on include azaleas, chrysanthemums, roses, tulips and rhododendrons.



Circle No. 194 on Reader Inquiry Card

'New breakthrough' in space furniture

The Plexus Collection is being called "a major breakthrough" by its manufacturers.

The new metal furniture system includes all the major elements of the public space into a single package. A metal grid pattern creates seating, tables, planters, trash receptables, ash urns, signage and banners in a linear or curvilinear design.

The heart of the system is a contoured seating unit that is ergonomically sensitive to the human form. The seat is available with or without back. An arm option is available.

Circle No. 194 on Reader Inquiry Card

Low-growing wildflowers have uniform texture

A new very low-growing wildflower mixture, Super-Short, has been introduced by Applewood Seed Co. Designed for use in urban or suburban settings, the mixture grows only six to eight inches high.

Another appealing feature is the mixture's uniform texture. Twenty-two annual and perennial wildflowers are balanced to exhibit a wide range of colors and blooming periods.

The mixture is designed for commercial and residential applications where a uniform, somewhat manicured look is preferred. An annual fall mowing or trimming is suggested.

Circle No. 195 on Reader Inquiry Card

Honda engine available on lawn and turf mowers

The Bunton Company is now offering the Honda GXV340 overhead valve commercial four-stroke engine as an option on its 52-, 48-, 40- and 36-inch heavy duty commercial lawn and turf mowers.

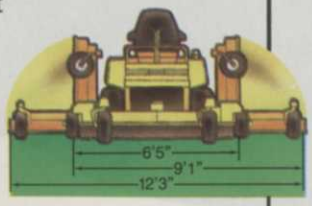
According to the company, the 11

continued on page 104

Expand your horizons

A Hustler Range Wing™ cuts big jobs down to size with "Productive Innovation."

An Excel Hustler Range Wing™ rotary mower can help you reach out to new productive horizons. It can double your mowing capacity at half the cost of competitive units. Another example of Hustler's "Productive Innovation."



With a Range Wing, you can put three heavy-duty decks on one machine—cutting a wide 12′ 4″ swath! With Hustler's unsurpassed maneuverability, you can cut up to 60 acres of turf in a day.

Each deck can be raised and lowered hydraulically to give you the ability to mow in tight situations with a 9′ or 6′ swath. The blades automatically stop as the wing is raised.

A Range Wing floats over the ground, following contours for a smooth, uniform cut. If your mowing requirements are large, the Hustler Range Wing is an economical way to get the most productivity out of your mower investment.

Excel Hustler maneuverability and versatility mean the utmost in productivity. Visit your dealer soon and put a Hustler to work for you. Or, call toll-free for more information.

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EXCEL HUSTLER
Turf & Grounds Equipment

Hustler Tough And Built To Last!

Model 251	Model 262	Model 275	Model 320	Model 340	Model 400	Model 602D
18 hp, 50″	18 hp, 60″	23 hp, 72″	21.5 hp, 72″	28.5 hp, 72″	34 hp, 72″	32 hp, 72″ hillside

Circle No. 126 on Reader Inquiry Card

BEFORE WE DEVELOPED THESE PROBLEM-SOLVING TURFGRASS MIXTURES, WE MARCHED THROUGH ACRES AND ACRES OF PROBLEMS.

Nobody knows the troubles we've seen.

Our Northrup King turf specialists and researchers have hoofed through salt problems, soil compaction, disease, starved turf, baked turf, cleated-to-shreds turf, and dormant winter turf—all depressing sights. But it was a road well worth our travels.

The result is a complete line of Medalist® turfgrass formulas that meet the demands of the professional turf manager.

If you've been staring down at a turf problem, look up your solution here. And if you think it's a turf problem we haven't seen, just let us know.

Our business is putting your problems behind us.

MEDALIST TURF PRODUCTS ™

MEDALIST TURF PRODUCT	MAJOR AREAS OF USE	SPECIAL FEATURES
Athletic Pro and Athletic Pro II	For athletic turf.	Well suited for new seeding or overseeding. Fast establishing, traffic tolerant, rapid recovery. Both provide good footing.
Boulevard Mix	Any area with high pH (roadsides, sidewalks, boulevards, alkaline soils, etc.).	Contains 'Fults' and Dawson red fescue for beautiful salt-tolerant turf. Performs at low to high fertility levels.
Landscape Pro Mix	School grounds, cemeteries, golf course roughs, home lawns.	Establishes fast. Adapts to broad range of conditions and management levels. Low to moderate fertility needs.
Overseeder II Mix	Fairways, tees, athletic fields.	Rapid germination and establishment. Withstands heavy traffic and resists diseases. Penetrates compacted soils.
Medalist North Mix	Fairways, tees, cart paths, wear areas.	Quality turf for high traffic areas. Clean mowing and disease resistant.
Premium Sod Blend	Commercial sod production.	Exceptional dark green color. Tolerates light shade. Superior disease resistance. Rapid sod producer.
Renovator Pro Mix	Problem solver for heavy traffic areas (athletic fields, golf tees, and fairways).	Penetrates compacted soils and combats *Poa annua.* Adaptable to most geographic regions.
Medalist Brand Overseeding Products	Winter overseeding of dormant bermudagrass.	Establishes rapidly and evenly. Tolerates traffic while providing a superior putting surface. Smooth spring transition.

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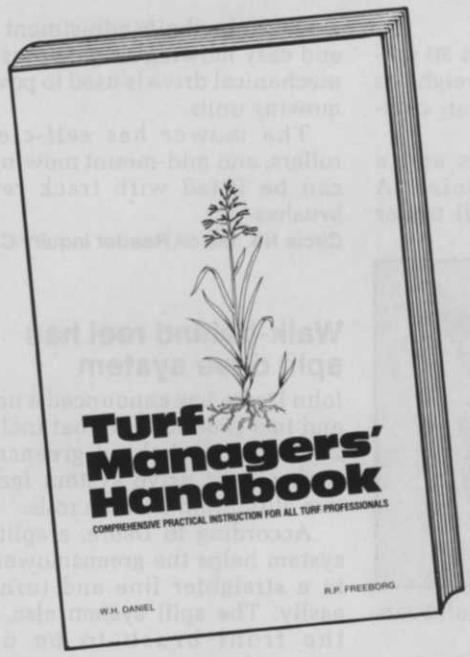

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Circle No. 158 on Reader Inquiry Card

continued from page 100

hp vertical shaft engine uses 30 percent less gas and oil and weighs as much as 25 percent less than comparable engines.

Dual synchro balancers and a muffler reduce engine noise. A trochoid oil pump sends oil under

pressure to the upper crankshaft bearing and rocker arms.

Circle No. 196 on Reader Inquiry Card

Perennial ryegrass blend bolstered by components

Futura 2000 perennial ryegrass from Pickseed is a blend of Fiesta II (a new Pickseed perennial rye), Dasher II and Blazer perennial ryes. Each variety was selected for its strong characteristics.

Fiesta II adds color, density and heat tolerance; Dasher II adds disease resistance; and Blazer provides winter hardiness, persistence and a medium-late heading date.

Futura 2000 can be used in the south for winter seeding of warm season grasses, and for turf in northern areas.

Circle No. 197 on Reader Inquiry Card

Tractor-mower has unique adjustment

Brouwer Turf Equipment has a new tractor-mount mower with a new mowing head available in five-, six-,

seven- or eight-blade reels. A choice of fixed or floating mowing heads is offered.

The mower also has a unique single-point bedknife adjustment design and easy mowing height adjusters. A mechanical drive is used to power the mowing units.

The mower has self-cleaning rollers, and mid-mount mowing units can be fitted with track removal brushes.

Circle No. 198 on Reader Inquiry Card

Walk-behind reel has split drive system

John Deere has announced a new golf and turf product line that includes a 22-inch walk-behind greensmower with a split drive system featuring two aluminum traction rolls.

According to Deere, a split drive system helps the greensmower track in a straighter line and turn more easily. The split system also allows the front brush to be driven separately.

The new greensmower features a nine-blade high-tensile-strength reel and three millimeter hardened steel bedknife which delivers a quality cut up to 5/32 of an inch. An optional 2.5

millimeter bedknife is available for a 1/8-inch tournament cut.

Other features include a three-liter fuel tank, handle-mounted controls, solid front roller and grass-catcher.

Circle No. 199 on Reader Inquiry Card

New fungicide effective on variety of diseases

A new fungicide from Lebanon Chemical, which contains one percent Bayleton, has numerous preventive and curative applications in the turfgrass industry.

The fungicide can be used as both a preventive and curative on dollar spot, copper spot, brown patch and red thread, in addition to a number of other diseases.

It can be used as a preventive treatment for summer patch (fusarium blight), gray snow mold and pink

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A foot pedal controlled hydrostatic transmission affords variable mowing speeds as well as transport speed to insure maximum travel time between the job sites. The Hydro-Power 180 offers year-round versatility with a 2-stage, 73'' snow blower and heated cab.

Manufactured by HOWARD PRICE TURF EQUIPMENT **18155 Edison Avenue Chesterfield, Mo. 63017**

Circle No. 148 on Reader Inquiry Card

snow mold, as well as others.
Circle No. 200 on Reader Inquiry Card

Riding mowers redesigned with variable-speed system

John Deere's line of riding mowers has been re-designed to give them a variable speed drive system, increased horsepower and a shorter turning radius.

The drive system has a gear transmission with a belt system to vary ground speed to suit mowing conditions. The mower has seven speed settings ranging up to 5.4 mph, and reverse speeds up to 2.4 mph.

In addition, the company has added a third front mower to its 900 series. The series now features three engine types: the air-cooled F910; the liquid-cooled diesel F915; and the new liquid-cooled F912.

The F912 has a 20 hp engine, with full-pressure lubrication, electric fuel pump and electronic ignition.
Circle No. 201 on Reader Inquiry Card

Soil pH meter shortens testing time period

Scotts' Model 100 portable pH meter decreases the need to send samples to labs for pH analysis.

It has a 5½-inch taut-band meter, solid state electronics, Teflon-insulated input circuitry and a battery life of 300 hours. The unit weighs less than three pounds.
Circle No. 202 on Reader Inquiry Card

Aerial lift device hits tree trimming market

Altec Industries has introduced the Linebacker LB series of aerial devices designed specifically for the tree trimming industry. The series utilizes two cylinders on the lower boom lower end to achieve an articulation range of 0° to 135° (45° beyond center). The upper boom elevation is reached with a cylinder and four bar linkage providing 210° of articulation.

The LB series has three-lever upper controls, lower controls that can override the upper ones, and a positive cable/fiberglass rod leveling system.

The one-man fiberglass platform with step is 24 x 24 x 39 inches and has a capacity of 350 lbs. Options include a chain saw holder, pruner holder and a platform cover and liner.
Circle No. 204 on Reader Inquiry Card

Systemic fungicide in water soluble bags

W.A. Cleary's 3336 systemic fungicide is now available in water soluble bags. The bags are safe, easy to use and provide no exposure to chemical dust, fumes or residue, and no container disposal.

Four eight-ounce packages come in a foil packet, with six packets making up a case.
Circle No. 204 on Reader Inquiry Card

Vertical shaft engine useful on mowers

New 16 hp and 18 hp vertical shaft engines from Kohler Engines provide an alternative to horizontal shaft engines on lawn tractors and commercial mowers.

The MV16 and MV18 feature electronic ignition, a mechanical fuel pump, a closed breather, full pressure lubrication, sleave bearings and a 15 amp regulated charging system. A 25 amp charging system is optional.

Also optional is a full flow oil filter, grass screen guard and backup rope start.
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But we're not standing still. Just last year, we ushered in a new era in pythium prevention with our new Chipco Aliette® fungicide—the first of a new generation of advanced chemistry to carry the Chipco name.

Naturally, products like these are only as good as the company that stands behind them. And nobody offers you more technical support than Chipco with our field force exclusive to turf and ornamentals.

In 1987, Chipco will introduce new formulations of three Chipco products. But we're not stopping. Exciting new products soon to earn the Chipco name are in various stages of development.

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Circle No. 152 on Reader Inquiry Card

ALLIGATORWEED *from page 94*

the leadership of Dr. Langeland, developed a herbicide program to meet that objective in 1983.

The first roundup

The program was introduced in the Scuppernong River where the problem was particularly severe. From boats, crews armed with hand-held sprayers applied Rodeo herbicide, a broad spectrum, post-emergence aquatic weed killer. The initial treatment was made during alligatorweed blooming in the spring, and was applied at a rate of 1.25 percent solution plus surfactant.

"Just a few weeks after the initial application, a substantial amount of mats and plants had already been eliminated," Langeland says. "We made a second application later in the year to control regrowth, and by the following year, found very few alligatorweed mats remaining. We were, in fact, highly successful in obtaining control of alligatorweed."

Another key factor, Langeland says, is the environmental compatability of Rodeo. Tests have shown that the herbicide biodegrades rapidly and is activated on soil particles and sediment, has no effect on fish, humans or other mammals, and does not bioaccumulate in the food chain. This makes it safe to apply to water bodies used for recreation and commercial enterprises.

The management program has successfully and economically restored the Scuppernong as a fishing and recreation center for area residents. "Without busting our budget, we were able to reopen several miles of the Scuppernong to public boating, and eliminate the need for routine draglining at river bridges," Langeland says.

"In addition, we averted a major flood potential since, otherwise, there is always a high risk that the river can overflow due to the presence of a substantial number of alligatorweed mats obstructing water flow."

This program to control alligatorweed has been so successful that plans call for similar programs in other areas. "We are already applying Rodeo to small creeks and canal tributaries in the region," Langeland notes. "Once it has been eliminated from these waterways, reinfestation can only occur through vegetative reintroduction."

The last roundup

"Our goal is to completely eliminate the weed, maintaining alligatorweed populations at the lowest level possible by spot-spraying periodically," says Langeland. "We'd also like to make farmers more aware of the consequences of alligatorweed on their cropland and in drainage canals, and help them develop their own maintenance programs," Langeland concludes. "Through our cooperative efforts, we can maintain alligatorweed below problem proportions in the entire coastal plains." **LM**

COMING IN JUNE

2nd annual report on ATHLETIC TURF, focusing on the successful maintenance of high school fields.

MARKETING MANUVERS

from page 88

you should learn the best of the combination of Nos. 2 and 3 and use those salespeople who both see a large number of people and who are successful at closing the sale.

4. What is the retention rate for each individual salesperson? This is seldom done, but over a period of a season it will tell you which of your salespeople sold well and which oversold. If they oversold the customer, you will find a very low retention rate.

Those salespeople who were professional in explaining your services will have customers who remain with the company because the results will match their expectations. As with any type of management information, this list can grow considerably and be much more detailed.

The areas listed above are a starting framework. By gathering these types of marketing information you will have a much better understanding of your current customer base, who you should target in the future, and the internal efforts of your organization.

Your knowledge of these points will enable you to plan better and thus make your organization more competitive in the growing green industry marketplace. **LM**

EVENTS

APRIL

Texas Wildflower Day, April 24-25, Texas Women's University, Denton, Tex. Contact: Dr. Robert Collier, P.O. Box 22675-TWU Station, Denton, TX 76204; (817) 898-3326.

Turf & Landscape Institute, April 27-29, Anaheim Convention Center, Anaheim, Calif. Contact: Ed McNeill, 2492 E. Mountain St., Pasadena, CA 91104-3423; (818) 798-1715.

MAY

Mole Cricket Classic & Educational Seminar, May 4, Oak Mountain State Park, Birmingham, Ala. Contact: Judy Copeland, P.O. Box 70, Auburn, AL 36831-0070; (205) 887-6916.

Pest Control Workshop, May 7, Agricultural Center Auditorium, Sanford, Fla. Contact: Uday Yadav, University of Florida, extension service, Sanford, FL 32771; (305) 323-2500 ext. 182.

American Horticultural Society Annual Meeting, May 13-16, Omni Park Central Hotel, New York City, N.Y. Contact: Harriet Sweeney, AHS, P.O. Box 0105, Mt. Vernon, VA 22121; (703) 768-5700.

Western Chapter, International Society of Arboriculture Annual Conference, May 15-18, Santa Cruz Holiday Inn, Santa Cruz, Calif. Contact: Donald Blair, 1958 Latham St., Mountain View, CA 94040; (415) 967-4676.

North Carolina Turf & Landscape Field Day, NCSU Turf Field Center, Raleigh, N.C. Contact: J.M. Dipaola, Box 7620, North Carolina State University, Raleigh, NC 27695-7620; (919) 737-2657.

Hands-On Equipment Expo, May 15-16, Alameda County Fairgrounds, Pleasanton, Calif. Contact: Jim Kwiat, Sequoia Landscape Specialties, 236 Sequoia Ave., Walnut Creek, CA 94595. (415) 937-7973.

To ensure that your event is included, please forward it, at least 90 days in advance, to: Landscape Management Events, 7500 Old Oak Boulevard, Cleveland, OH 44130.

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HELP WANTED

Superintendent Landscape Management - Firm seeking motivated individual to contribute to continuous success in professional horticultural care. Responsible for scheduling expediting tree, lawn and commercial maintenance crews. Strong organizational and management skills are essential. Contact Yates, 132 Greenbrier Rd., Chesapeake, Virginia 23320. 4/87

LANDSCAPE MAINTENANCE - progressive Washington, D.C. area landscape firm is looking for responsible working foremen & trainees to join our Maintenance Department. Our Maintenance Program consists of 2-3 man crews doing residental tree, shrub & bed care with an emphasis on quality. Openings also in our installation department. We work a 4-5-day week and offer good pay and benefits. Willingness to work hard and produce is essential. Send resume and references to: **GARDEN GATE LANDSCAPING, INC.**, 821 Norwood Road, Silver Spring, MD 20904. 4/87

LANDSCAPE MAINTENANCE FOREMAN: Firm needs individual able to supervise and motivate own crew. Candidate must know plant materials and standard horticulture practices. Position offers excellent growth potential and salary commensurate with experience. For more information, call American Lawn Care Company, Niles, IL. 312-965-2427. 5/87

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TREE SUPERINTENDENT to manage Tree Division for a well established landscape contracting company in southeastern PA. Must be educated and field trained in all aspects of arboriculture, be assertive with sales, personnel, management and paperwork. Call or send resume: Heyser Landscaping, Inc., 400 N. Park Avenue, Norristown, PA 19403, (215)539-6090. 4/87

LAWN SPECIALISTS: needed for rapidly expanding lawn care company. Seeking candidates with management potential, capable of handling sales, production, and service. Experience preferred, but will train. Excellent pay, friendly work environment. Call Treeland Lawn Care, Bridgeport, CT 203-372-3511. Tony or Bob. 4/87

Established 76 year old complete landscape and tree service firm has positions available for tree climbers and landscape foreman. Send resume to Chas. F. Irish Co., Inc., 24900 Groesbeck Hwy., Warren, MI 48089. 6/87

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PROJECT MANAGER: Excellent opportunity for career and goal oriented individual to work with a commercial landscape firm in Atlanta, Georgia. Must be experienced in all aspects of landscape construction and willing to assume total responsibility. Good salary, benefits and incentive program. Scapes, Inc., 404-956-7500. 4/87

CAREER OPPORTUNITIES: ChemLawn is now accepting applications for the positions of Lawn Specialist in our expanding Florida Markets. Join the Nation's Leader in Lawn Care. Send resume to LM Box 422. TF

Top turf equipment house needs a quality sales person with good agronomical background in fertilizer and chemicals for fine turf areas, mechanical aptitude, hands on experience with all types of turf products, sales and marketing experience in territory sales and management. Excellent opportunity for qualified person. Resume and qualified references required, P.O. Box 22628, Houston, Texas 77227. 5/87

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Career Opportunities: Landscape Estimator, Maintenance and Landscape Sales Representatives, Irrigation Foreman, Nursery Manager, Nursery Sales Representative, Landscape and Maintenance Foreman. Immediate openings, in all 4 branches, for experienced and enthusiastic individuals interested in joining a successful team of professionals in the largest landscape contracting firm in the mid-Atlantic. Excellent compensation package and benefits. Call or send resume in confidence to: Daniel W. Tamminga, Davis Landscape Contractors, Inc., 615 S. Frederick Ave., Ste. 302, Gaithersburg, MD 20877, (301)258-8430, EOE. 4/87

Landscape maintenance sales position available for energetic, self-motivated individual. Education in agricultural related field and/or sales experience preferred. Base salary plus commission. Send resume/work history to Sales Manager, Maintain, Inc., 16008 Boss Gaston, Richmond, TX 77469. 4/87

HELP WANTED: Working Partner Lawn Maintenance: Looking for an experienced working manager who would like to have his own company, but doesn't have the capital. We are an expanding company operating in Rockland County, New York. Equity toward ownership, salary, and benefits. Reply to: L. G. Corp., 21 Hemlock Rd., Briarcliff Manor, New York 10510. 914-762-5793. 4/87

GROUNDS MAINTENANCE AND PLANTING SUPERVISOR/FOREMAN: Well established landscape contractor in the Philadelphia area is seeking experienced quality supervisors and/or foremen to fill various positions. Salary and benefits commensurate with experience. Forward resume to: Personnel Office, Heyser Landscaping, Inc., 400 N. Park Ave., Norristown, PA 19403. 4/87

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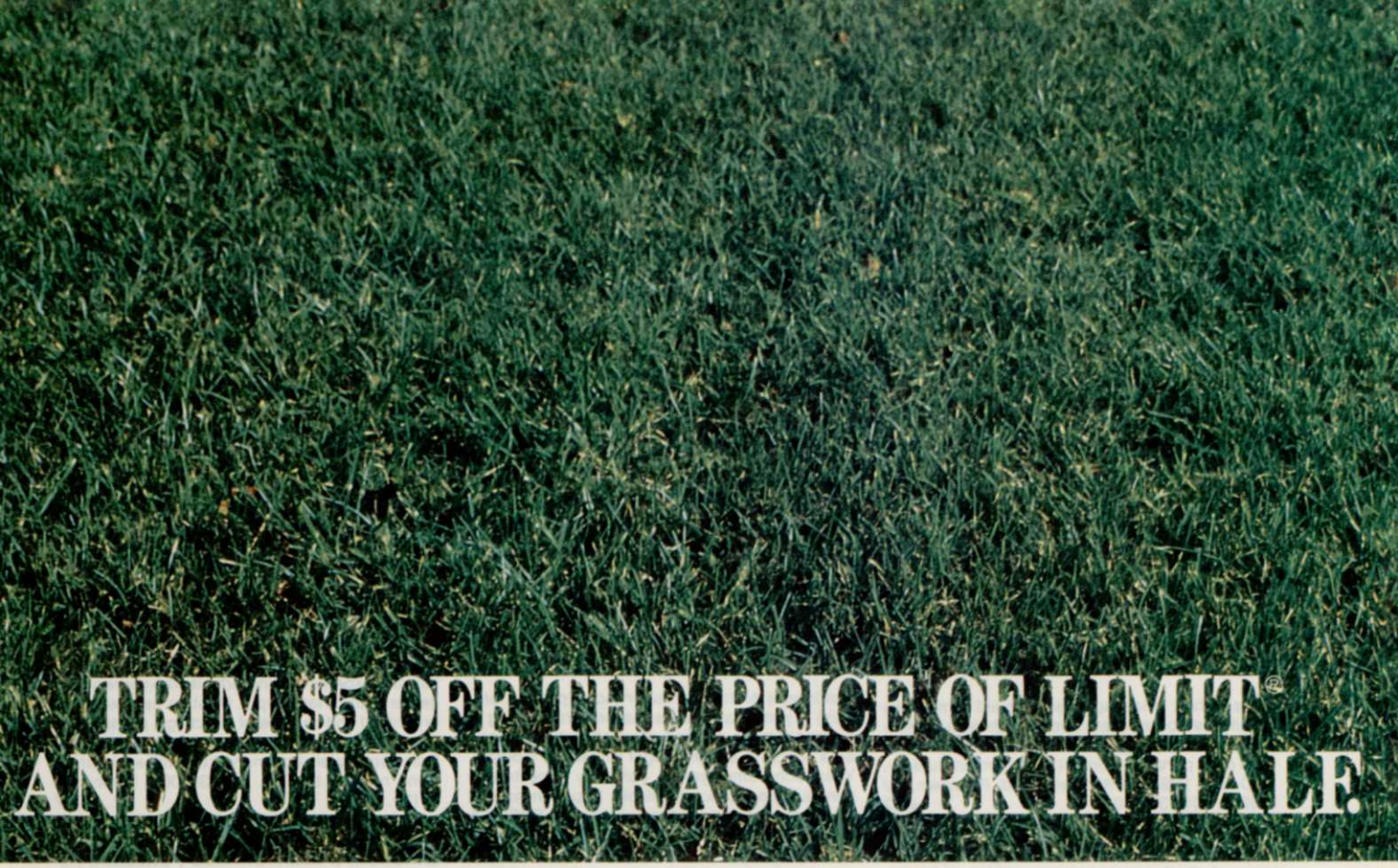

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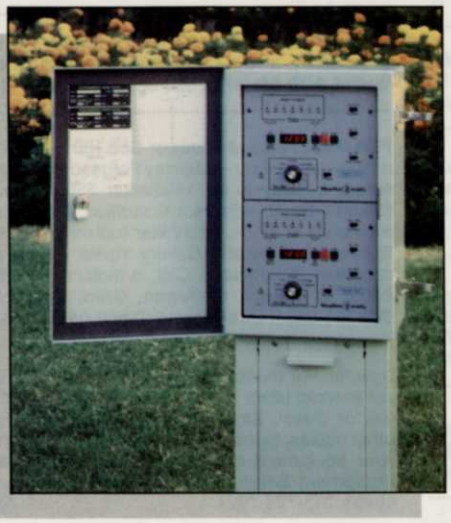

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NO STAKES NEEDED!

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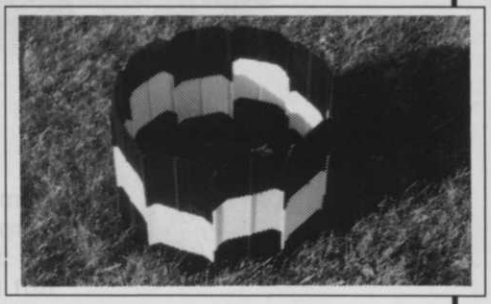
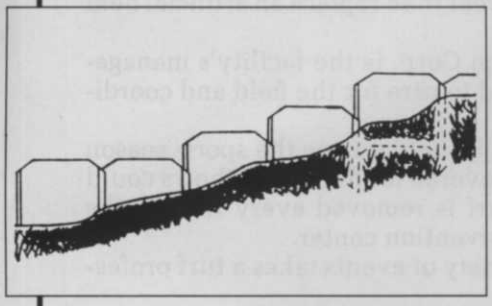


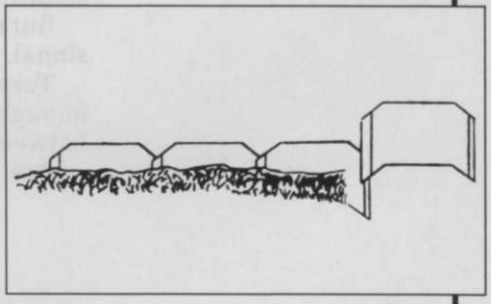
STACK 'EM UP!

That's right…you can stack pieces one on top of the other to suit your needs – around trees or whatever. Build it high or keep it low!



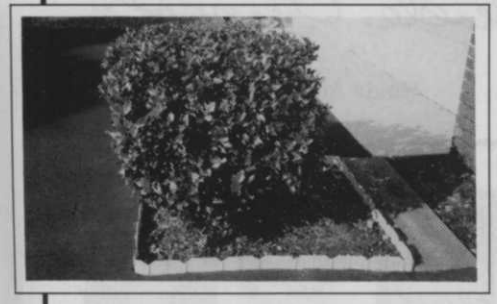
UP HILLS–DOWN HILLS!

Since **EDGE LOCK™** slides together vertically, you can use it like a stair step to negotiate up or down hills easily!



NO CONNECTORS NEEDED!

Each section slides inside the other bonding it together from top to bottom. Each section pivots inside the other so you can go around tight corners with ease. And it won't pull apart!



ON AND ON . . . AND ON . . . AND ON . . .

How about a 20' section in a small box 7" x 11" x 5" that you can carry in your hand? Flat pieces that can be bent *by hand* to make those sharp corners. Three different heights for different soil conditions. Competitive pricing, colors, PVC Construction and more. Want the whole story? Call or write for a free sample and brochure. Tell your distributor to **"PLEASE STOCK EDGE LOCK™"** because nothing else will do. (Patent Pending)

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Circle No. 117 on Reader Inquiry Card

Gutsy grass-backers

A funny thing happened on the way to planning Toronto's dome stadium. Somebody suggested that natural grass might be safer for athletes than synthetic surfaces.

That somebody isn't a turf expert or a politician or part of the Stadium Corporation. Rose Marie Branson is just a Blue Jays fan.

Actually, she's more than a fan. She's the first person in North America to get a major city to take a long, hard look at the safety differences between natural and artificial surfaces.

Branson, along with equally dedicated grass-backers at the *Toronto Star*, sponsored a pro-grass day in Toronto. The turnout included Blue Jays managers, Toronto mayor Art Eggleton, media and about 100 supporters. She brought in the kings of our industry: Dr. Jim Watson, vice-president of The Toro Co, Dr. Bill Daniel, inventor of the Prescription Athletic Turf (PAT) system, and Steve Wightman, field manager of Denver's Mile High Stadium. Even I had a chance to participate.

The questions raised weren't about the agronomics of growing grass indoors. The experts agreed it's feasible with improved turf varieties, good drainage systems (like PAT) and new geotextiles.

But the meeting raised other critical questions:

Will the retractable dome on the stadium be open, and closed only when necessary? Or will the dome be closed, and opened only on game days? Will the sod be removed each winter? Or will it be maintained year-round? (It may be cheaper to re-sod each year than replace an artificial field every five years.)

But the biggest consideration of the Stadium Corp. is the facility's management. One professional turf manager is needed to care for the field and coordinate events.

Wightman will attest that rock concerts can be held during the sports season with minimal damage to the turf. Turf can be covered for five days. Shows could go on during the sports season, and, if the turf is removed every winter, the stadium could function as a multi-purpose convention center.

But managing good turf while juggling a variety of events takes a turf professional. Hiring the right person is the key.

Toronto is expected to release its decision this month. I hope the city is gutsy enough to go with grass. But even if they don't, they've opened up dialogue between cities, architects and turf scientists.

Are you listening Chicago and Cleveland?

Heide Aungst

Heide Aungst, associate editor

Questions and comments are encouraged.
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